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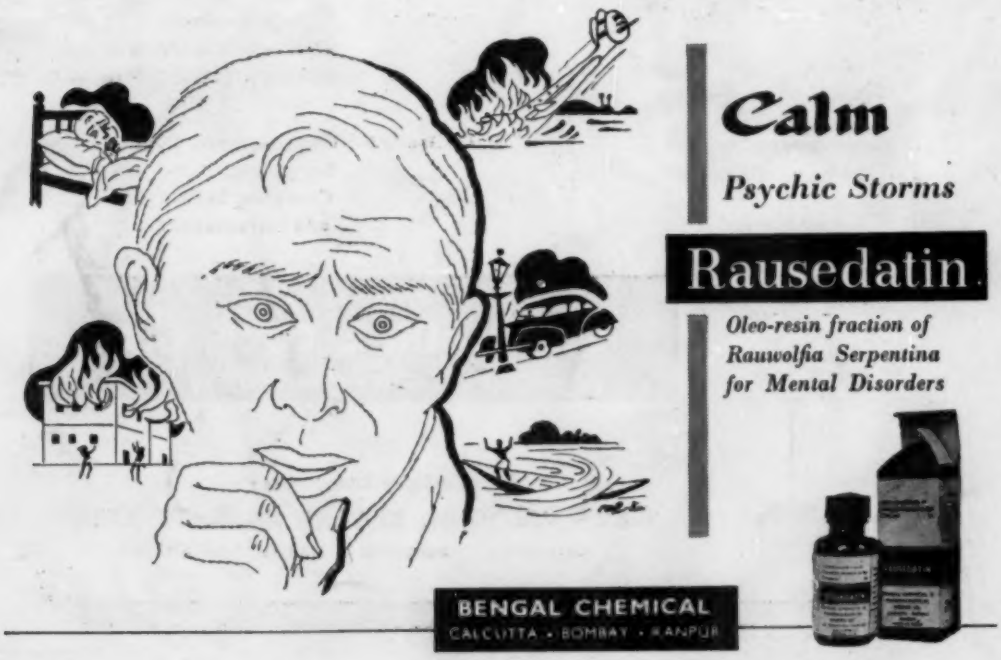

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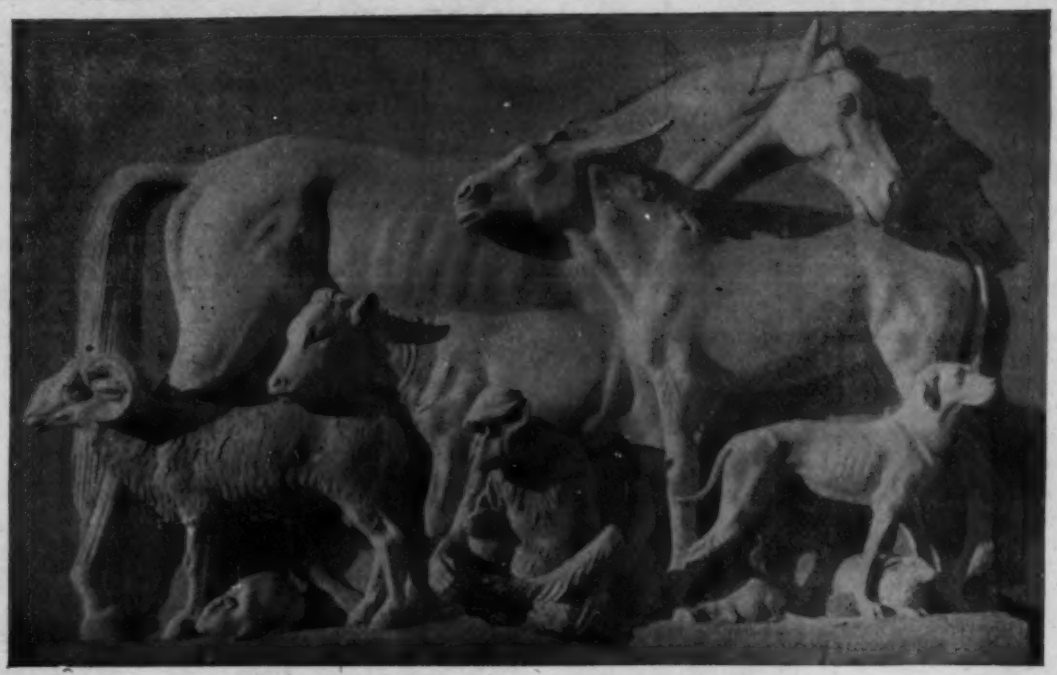

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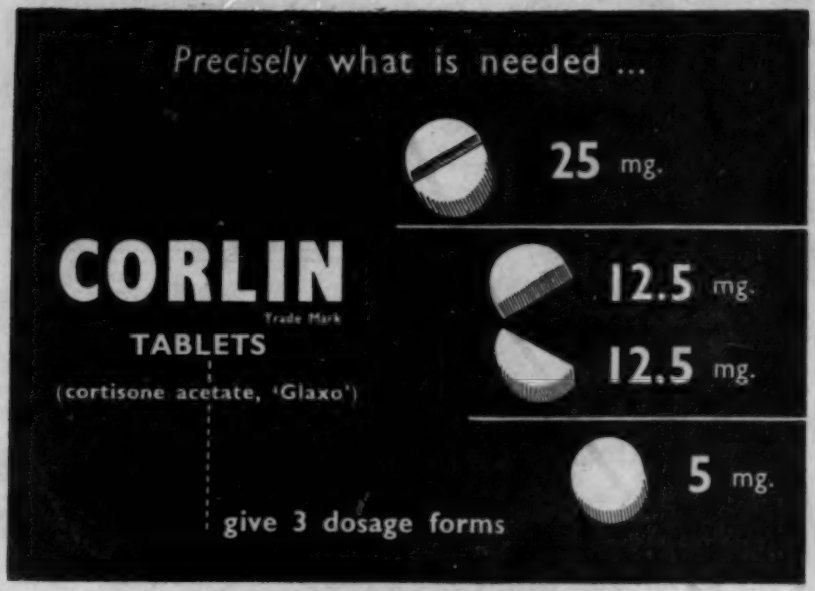

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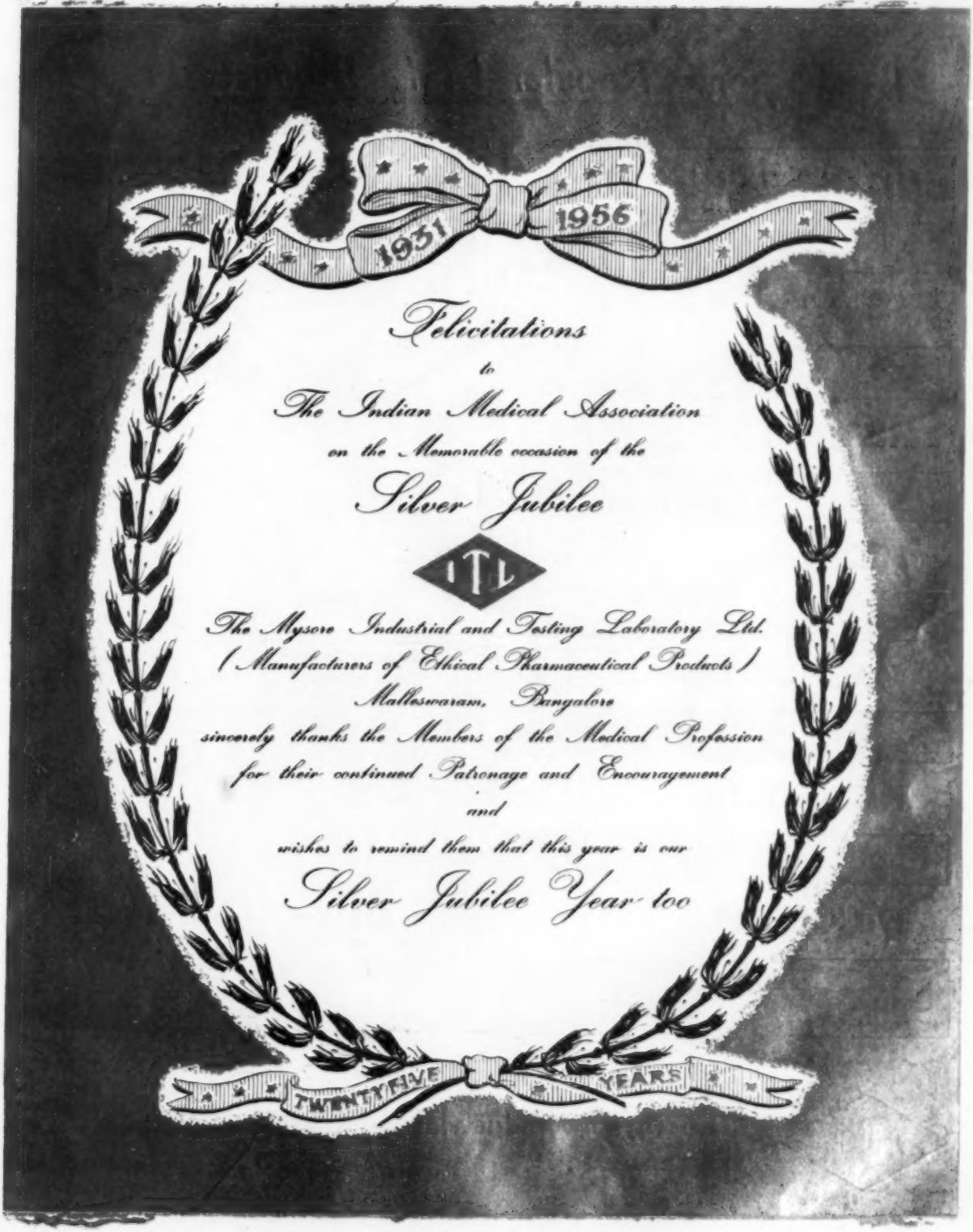
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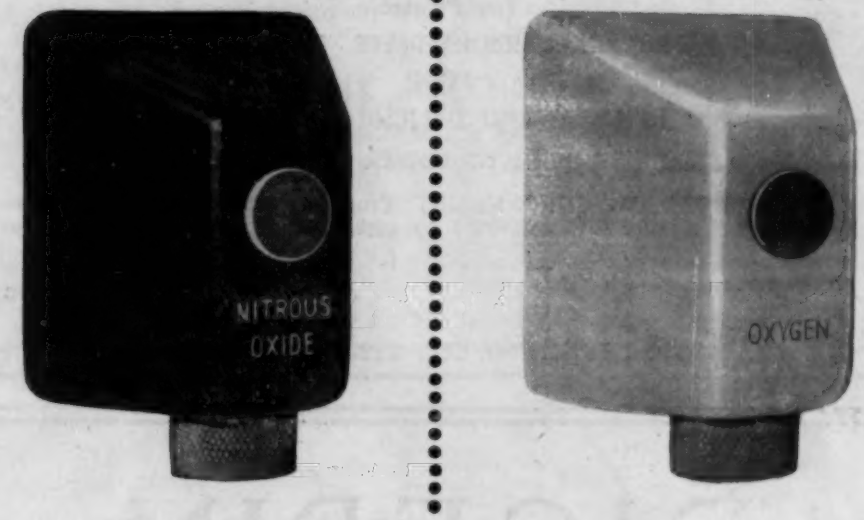

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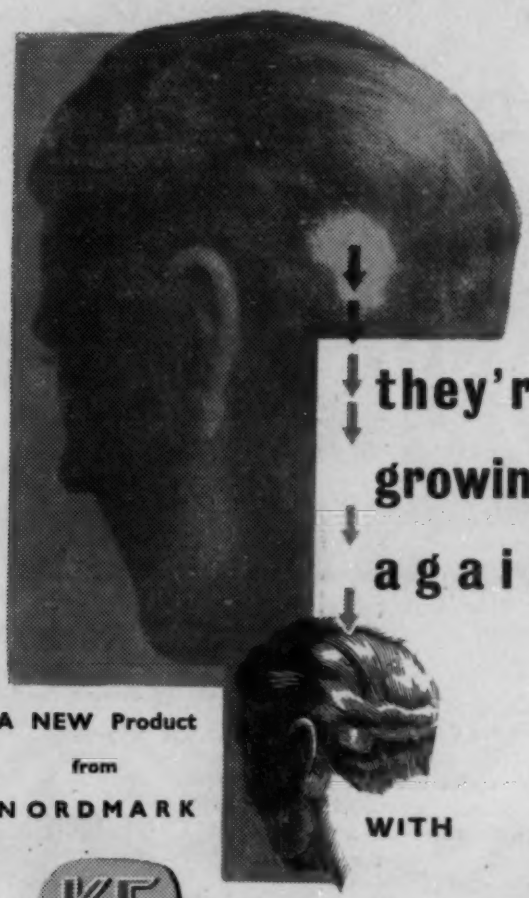

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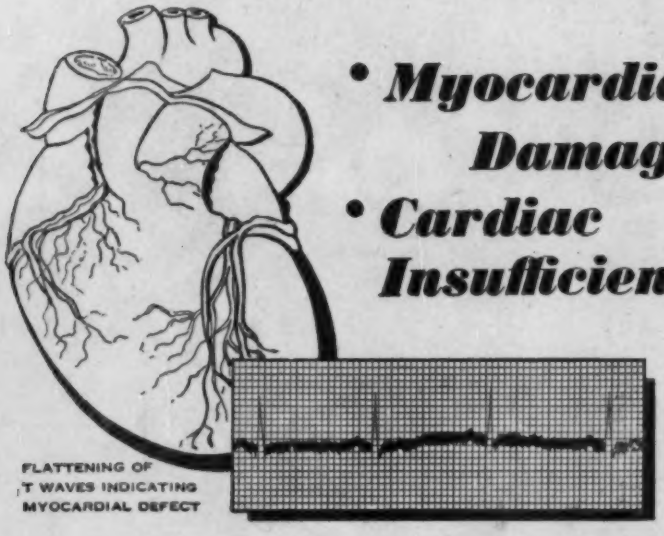

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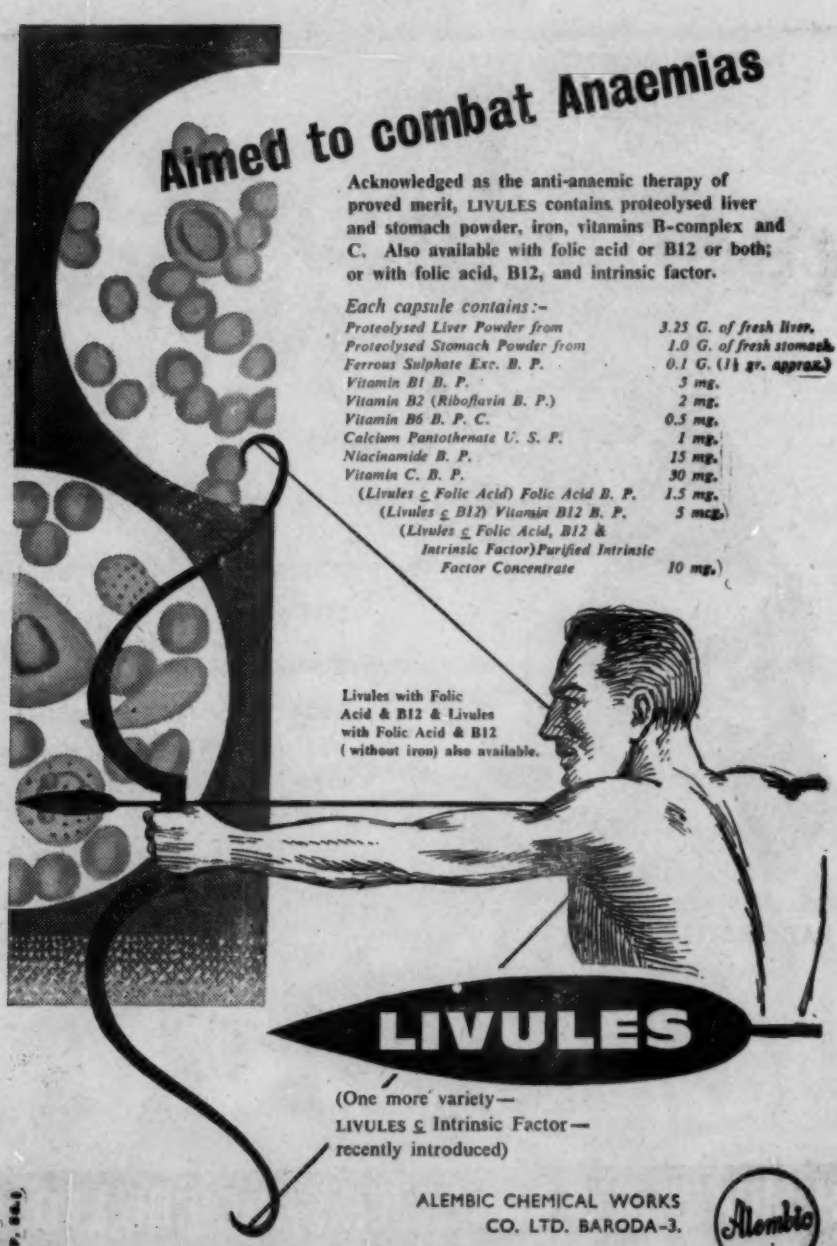

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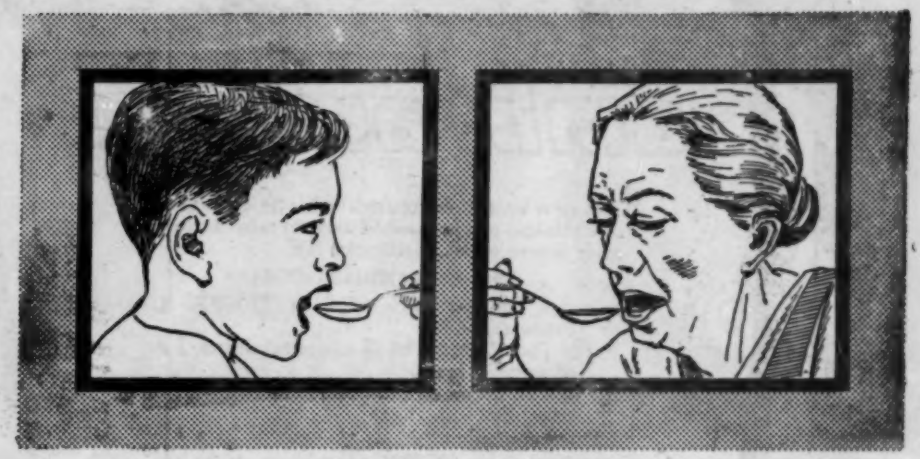

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CASE No. I

The above two photographs are of a boy of three years who was suffering from malnutrition, anaemia, oedema of ankles with enlarged liver and spleen and intermittent pyrexia. He was under the treatment of Dr. G. H. Karmakar of Bhangore, 24 Parganas. He was treated with 'Amino-Protin' and 'Vitadilin' for improvement of his general health. The patient showed evidences of appreciable improvement on the 3rd week of his treatment. General health improved, gained weight, oedema of ankles subsided and recovered physical strength as good as to walk without any assistance after six weeks time. The state of health became **"very fine"** (as stated by the doctor) after three months only.

Before treatment

CASE No. II

After 3 months' treatments

Pintoo Chakravorty, a Hindu boy of six years age, son of Hariday Nath Chakravorty of Basirhat, 24 Parganas, W. Bengal had been continuously suffering from Indigestion, Anaemia, Low grade fever, Tympanitis, depapillated tongue with enlargement of Liver. Weight was found to be 23 lbs. only.

He was treated with 'Vitadilin Liquid' and 'Amino Protin' and was advised to take a balanced diet. Administration of the drugs was withdrawn after two months and during these two months time his general health showed gradual improvement along with subsidence of the clinical symptoms. His weight increased by 12 lbs. within a period of three months.

The first Photograph was taken just at the start of the treatment and the second one after a period of three months. It should be mentioned here that during the whole period the patients health was observed to be improving with steady progress.

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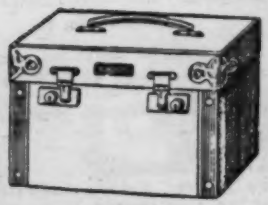
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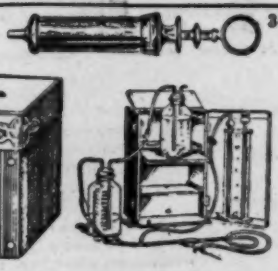
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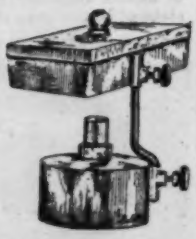
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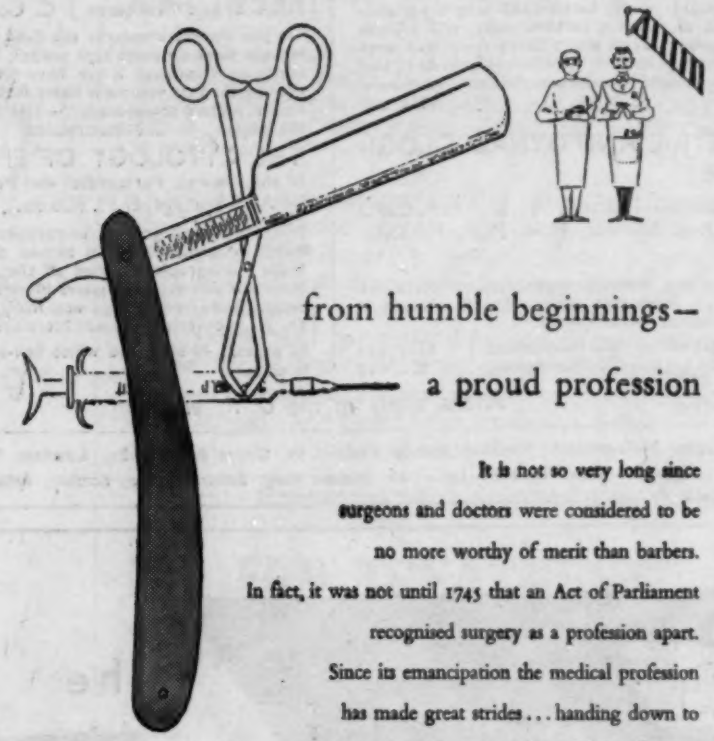

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CALCUTTA—26.

SILVER JUBILEE NUMBER

Journal of the Indian Medical Association

VOL. 28, No. 1 CALCUTTA PUBLISHED TWICE A MONTH JANUARY 1, 1957

OUR SILVER JUBILEE

The Silver Jubilee Number of this Journal registers a landmark in its life. For as a man comes of age at 21, a journal may be said to have attained adulthood at 25 years. It is a matter of gratification that we happen to be associated with this notable event in its life. We remember on this occasion with deep respect and admiration our illustrious predecessors who sponsored, nursed and shaped the destiny of this Journal.

A journal is not merely a number of printed pages. Once it has attained majority, and the Journal undoubtedly has, it acquires a distinct personality even as a human being. In the cosmic scale a quarter of a century is but an evanescent bubble, but measured in human terms it is quite an age—very nearly the span of a generation of mankind. And in a generation many things happen: what once seemed momentous appears ephemeral; things that had little significance assume import; values change and are redefined; ideas transmute; knowledge expands; the young grow; the old die. The time is long enough for tradition to grow and take firm root. Though values may shift and emphasis turn, tradition retains its organic unity forging new links to its unbroken chain with one end anchored in the past, the other extending to the infinity of the future.

This tradition has been one of dissemination and advancement of scientific knowledge of medicine, and service to the medical profession in particular and the people in general. The raising of the standards of health of the people and the upholding of the rights and privileges on the one hand and the maintenance of the dignity and ethical conduct on the other, of the medical profession, have been and continue to remain our objectives. It is by loyally adhering to this tradition that we have come to attain the unique position that we occupy today.

The task has not been an easy one. Sometimes we had to contend against heavy odds. But thanks to the counsel, collaboration and help we have received from many quarters we have successfully steered clear of the Scylla of despair and the Charybdis of impotence. In particular our relations with the Government have not always been of the happiest. This was but natural for the earlier years of the Journal while an alien Government ruled the country and the interests of the Government could not be equated with those either of the profession or the

people. With the coming of Independence we had hoped for better relations. It is a matter of regret therefore that the views of the new bureaucracy too are seldom congruent with those of the medical profession. This however is neither the place nor the occasion for levelling criticisms against anybody. We merely record our regrets.

During the past twenty-five years the Indian Medical Association has passed through many changes. Starting from modest beginning it is now the foremost national organisation of medical men in the country. Even though its membership has increased a hundred-fold, there are many who are still outside it. We would invite them to come and join hands under the banner of the Indian Medical Association for that will lend us added strength and arm us better for service to our brethren. Elsewhere we have tried to give a fairly complete history of the Association whose official organ we have the privilege to edit.

We have further included a history of the Journal, the changes it had passed through during the last quarter of a century.

We had also asked all past Presidents of the Association who are still with us for messages on the occasion of our Silver Jubilee. We are happy to record that most of them readily responded. We are thankful for their encouragement and good wishes. That we have not received the blessings from all of them is a matter of deep disappointment to us.

During the past twenty-five years spectacular and far-reaching advances have been made in different branches of medical science. We invited specialists to write on their own subjects. We are grateful to our contributors who have been able to accede to our request. These special articles form an important feature of this Number. We have not however been able to make it as complete as we wished it to be. Some of the invitees who had agreed to contribute were unable to do so. The short time at our disposal precluded alternative arrangements being made. This was another disappointment.

As to the future we do not know what it will bring. A little over two years ago the Journal was made into a fortnightly. We hope it will be possible to convert it into a weekly in the foreseeable future. Of one thing we are sure however, we and those who come after us will carry the torch that had been handed over by the late Sir Nilratan Sircar, Kt., of revered memory to the best of our ability and true to the traditions the Journal and the Association stand for.

Our efforts in presenting this Number have been limited by our resources in men, money and time. We therefore request the reader not to judge us too harshly.

In producing this Number we have received help and co-operation from many. To them and to all who worked hard for it our thanks are due.

ACKNOWLEDGMENTS

are gratefully made to the following for lending us photographs for reproduction in this Number:

Bengal Chemical and Pharmaceutical Works Ltd.
Bengal Provincial Branch of the Indian Medical Association
Dr. (Mrs.) Maitreyi Bose
Mrs. Sunil C. Bose
Dr. Anil Chaudhury
Dr. J. N. Dutt
Dr. Tripti Kumar Mittra
Dr. Narendra Nath Sen

Messages Received from Past Presidents of the Indian Medical Association

On the completion of 25 years of continued service to the medical profession by the Journal of the Indian Medical Association, it gives me great pleasure to congratulate the Journal and its present editor.

The Journal as is well known had a quiet birth under the supervision and guidance of the able late Dr. Nilratan Sircar in the year 1931 with a membership of 600. It was then nursed with great care by Late Dr. K. S. Ray and other illustrious editors. It has gradually grown from strength to strength in spite of illness of short duration and to-day it can boast of having a circulation of 20,000, a record for a medical journal. From a monthly journal it is now brought out fortnightly and what is more, it is in the hands of the readers a day or two before the due date of arrival, a record about which the editor and the management could well be proud of.

On reaching adulthood, the Journal has produced an offspring Your Health, *a popular health magazine for the welfare of the layman and it is greatly in demand.*

I take this opportunity of wishing the Journal a great and grand future and hope it will stand out as a distinguished journal equal to its counterparts in England and America.

R. A. Amesur

BOMBAY

R. A. AMESUR

If one has to mention the most important step that was taken by the distinguished founder members of our Association for furthering its cause it was the establishment of the Journal.

This journal formerly known as Indian Medical World *was started under the inspiration and guidance of late Sir Nilratan Sircar of Calcutta in March 1930. In September 1931 its name was changed to* Journal of the Indian Medical Association. *It was formerly a monthly publication.*

Thanks to our enthusiastic honorary members of the Journal Committee and to the literary and scientific minded members of our Association, we are now getting twice a month, free of charge, nicely got-up copies of the Journal containing interesting original articles, many matters of medical importance besides Association news of the different parts of our country.

Let us hope that in near future we will not only have the Journal published weekly but we shall have monthly, quarterly or annually scientific publications covering the different specialities of the medical science.

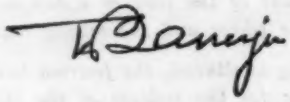
The scientific background of our profession needs the propagation of the knowledge of up-to-date scientific advances of the medical world. The high ideals and ethical standards which our Association aims to achieve and are achieving, the humanitarian help and activities adopted and needed in times of distress in different parts of our Union, all need broadcasting and this Journal serves that important purpose.

Twenty-eight years back, there were only 250 members and only one branch, whereas today our Association can boast of not only one branch in every state of the Union but there are branches located in every town, every subdivision and even in some villages and the membership has gone up to nearly hundred times of the original number.

I believe the most important factor in keeping the Association alive and expanding is this Journal.

I hope the Silver Jubilee issue will be something worth preserving for generations of doctors in our country to look at and read with interest.

Long live the honorary members of the Editorial Board and Journal Committee, long live Indian Medical Association and its Journal.

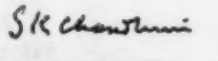


PATNA

T. N. BANERJEE

The Journal of the Indian Medical Association *is the official organ of the Indian Medical Association which is the national association of the medical profession of the Indian Union. It is gratifying to note that in twentyfive years, from small beginnings it has developed into a first class journal. It started as a monthly publication and it remained so until two years ago when it was converted into a fortnightly. The roll of membership of the Indian Medical Association gives an indication of the circulation of the Journal as each member is supplied with a copy. The membership has risen to about 19,000. There are 47,000 qualified practitioners who are not members. Obviously a great drive is necessary to make them members and thus make the Indian Medical Association a fully representative body of the medical profession of the vast subcontinent. With an increase in membership it should be possible to convert the Journal into a weekly.*

Original articles, practitioners' series and special articles have become regular features of the Journal. Members of the teaching staff, specialists and general practitioners contribute to its columns. Its contents are worth reading by research workers, practitioners and senior students. The maintenance of a professional journal up to the mark in the midst of competition is a difficult job. Be it said to the credit of the editorial staff that a large measure of success has been achieved ; it is a happy augury for the days to come.



BANARAS

S. K. CHAUDHURI

On the occasion of the Journal of the Indian Medical Association *completing its 25 years of life, I feel proud of my Journal.*

I have watched it grow right from its struggling state and through many vicissitudes into its present quality, get-up and status, enabling it to occupy a dignified position in the world's journals of its kind.

It has served very usefully not only the members of the I.M.A. but the whole medical profession in India. Changing from a monthly to a fortnightly Journal was a great achievement. All the successive Editors-in-chief and the Journal Committees deserve our gratitude and congratulations for their devotion, sincerity and hard work.

May the Journal of the I.M.A. be so useful that every member of the medical profession will love to have it.

Chamanlal Mehta

BOMBAY

CHAMANLAL MEHTA

It is indeed a matter of gratification that the Journal of the Indian Medical Association *would be celebrating its Silver Jubilee. It was with a feeling of trepidation that the publication of the Journal was first taken in hand twentyfive years ago. The main purpose of starting it was to develop the spirit of association and camaraderie among the members of the profession in India, to create public opinion about public health and other medical problems in the country, to bring about an early Indianisation of the medical services both at the Centre and in the States—then known as Provinces, and above all to encourage the study and publication of scientific medical work in India. The Journal was thus to be a forum of medical opinion as well as a medium for the publication of scientific work done in the country which functions it has well performed. Great credit is due to the early editors of the Journal, particularly the late Sir Nilratan Sircar and the late Dr. Kumud Shankar Ray for the care they took and the thought they bestowed on the development of the Journal. Credit is also due to their successors in the editorial chair for developing it still further and making it an important vehicle for the publication of medical research done in India and of professional thought ; as also for converting it from a monthly into a fortnightly publication and in expanding its scope at the same time. Let us hope that before long it would be possible to publish the Journal weekly, thus enabling it to take a prominent place among the important weekly medical journals published in the world.*

Jivraj N. Mehta

BOMBAY

JIVRAJ N. MEHTA

This year the Journal of the Indian Medical Association *celebrates the Silver Jubilee Anniversary of its coming into existence.*

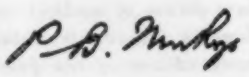
Twenty-five years ago, when the Indian Medical Association launched its modest publication Indian Medical World, *its members could not, in their wildest dreams, picture to themselves the status and growth of the Association and its official Journal in 1956, though they had high hopes and an earnest belief in what both could accomplish in bringing the members of the profession together and making them take an active interest in the various problems, affecting medical education, medical relief and public health in India.*

Over the years, each Editor has, in turn, and without thought of emolument other than the pride of his accomplishment and the appreciation of the members of the Association, contributed his time, energy and best effort in giving faithful expression, through the pages of the Journal, to the many successive phases of this outstanding progress and development. One of the most distinguished founders of the Association, a Past President and the first Editor of the Journal, Sir Nilratan Sircar, M.A., M.D., D.C.L., LL.D., etc. of revered memory, blazed the trail of a high standard of scientific endeavour from which the Journal has never deviated. The members of the Association and the Editorial Staff have combined their efforts in producing a scientific journal of distinctive quality and they can take justifiable pride in the splendid position which their Official Journal occupies to-day.

In the celebration of our twenty-fifth Anniversary, we can only faintly visualise the position of the Journal twenty-five years hence. But the status and useful position that is in store for the Journal at that distant date, will be largely an exposition of the thought and effort which we of to-day contribute towards its growth and advancement. We are, however, sure that the Journal has attained a standing and influence which will ensure its own continued and useful existence for many decades to come, in the service of science and suffering humanity.

I send herewith my most sincere and warmest good wishes for the uninterrupted growth and development of the Journal as one of the most powerful instruments in making India free from preventible diseases and ensuring positive health to her teeming millions.

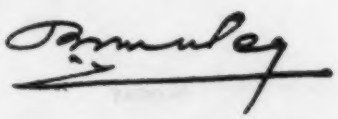
CALCUTTA



P. B. MUKERJI

The Journal of the Indian Medical Association *is the means of contact in the internal medical polity as well as with the advancing scientific world and it is a matter of pride that the efforts during the last 25 years of the Editors, the Journal Committees and the staff have carved a place of honour in either fields.*

BOMBAY



B. V. MULAY

I send my best wishes to the Journal of the Indian Medical Association *on completion of its twenty-five years of existence. Healing the sick is the noblest of professions, and the Journal has done commendable work in raising the standard of conduct of those who enter this profession and in disseminating the knowledge of medicine.*

CALCUTTA.

B. C. ROY

The Journal of the Indian Medical Association, *from its inception, has passed through 25 years of struggle and difficulties and has established its position amongst the medical journals of the world, as a professional and scientific journal. It has been no mean achievement and all credit for its steady progress must go to the members of the Association and its contributors and specially to the office-bearers of the Association and the Journal, who have worked steadfastly, at considerable personal inconvenience and sacrifice, for its success. We realise, however, that our difficulties and struggles are not yet over, that we have yet a long way to go, to make our Journal reach the highest standard of medical journalism ; we realise too well that this objective can be reached only with the united co-operation of the medical profession—members, readers, contributors and the office-bearers.*

It is my earnest hope that this journal of ours—which serves a dual purpose—professional and scientific—will continue to get ever-increasing support—financial, academic, literary and scientific—from all our colleagues—from all ranks of the profession and industry. It is then only we shall succeed in reaching our objective of raising the standards of medical education, medical research and medical service to our people.

DELHI

S. C. SEN

As one of the Founder-Members of the Indian Medical Association I am naturally very happy to know that the Journal of the Indian Medical Association *is celebrating its Silver Jubilee in January 1957. It is a very proud achievement for any Journal to be able to attain its Silver Jubilee. It is a great credit for the Editor and his collaborators to have converted a monthly scientific journal to a fortnightly one, and I felicitate them for this creditable achievement. The difficulties of running an academic journal are known fully to those who shoulder the burden. I hope the Association fully appreciates the enormous efforts which have been harnessed to the task for the last 25 years. This task will no doubt be made easier if all the members of the profession, both in it and outside it, put their shoulders together to uphold the prestige of the Indian workers in the medical world and in the world of science to-day.*

May the Journal prosper and achieve this goal.

CALCUTTA.

A. C. UKIL

PRESIDENTS OF THE INDIAN MEDICAL ASSOCIATION

Gopal Vinayak Deshmukh, L.M.S., M.D., F.R.C.S.,

was born in the year 1884. He was educated at Nagpur and at Bombay and London. He was President of the Bombay Municipal Corporation for a considerable time and also a member of the Central Legislature. He has written on medical subjects and on social reforms. He presided at the V All-India Medical Conference (Calcutta, 1928) and is the foundation-President of the Indian Medical Association then styled as the All-India Medical Association.

Bidhan Chandra Roy, B.A., D.Sc., M.D., M.R.C.P., F.R.C.S.,

was born on 1st July 1882 at Bankipore, Patna. After passing the B.A. examination he took his admission in the Medical College, Bengal. After qualifying in Medicine in 1906 he joined the Provincial Medical Service and while still in service he got his M.D. Obtained leave, went to U.K. and passed both M.R.C.P. and F.R.C.S. examinations by 1911. In 1919 he resigned from Provincial Service and joined the present R. G. Kar Medical College. Dr. Roy entered politics in 1923 and was elected to the Bengal Legislative Council. He was elected Mayor of Calcutta in 1931. He was appointed the Vice-Chancellor of Calcutta University in 1941. Since 1948 he has been Chief Minister of West Bengal. Dr. Roy was always an ardent supporter of the Indian Medical Association from the very beginning. He was the elected President of the Indian Medical Association for 1929-30 and was re-elected in 1937. He was the first Indian and non-official president of the Indian Medical Council.

Jivraj Narayan Mehta, M.D., M.R.C.P.,

was born on the 29th August 1887, at Amreli Town, District Amreli (formerly Baroda State).

He completed his high school education at Amreli and medical education at Grant Medical College, Bombay, and London Hospital, London. After obtaining L.M. & S. (Bombay) in 1908 he went to England and obtained M.D. in 1914 and M.R.C.P. (London) 1915.

He began his career as a consulting physician in Bombay in 1915, and became the Chief Medical Officer, Baroda State (1924-25), Dean of Gordhandas Sundardas Medical College and King Edward Memorial Hospital (1925-42).

On India attaining Independence he was selected to act as the Secretary, Department of Health, and Director-General of Health Services, Government of India (1947-48). His administrative abilities were then utilised by Baroda State where he was made the Dewan (1948-49). For his public work he was made a Justice of the Peace in 1926 which honour he resigned in 1930 during the Congress Freedom Movement. He was reappointed J.P. in 1936.

He was elected to the Bombay Legislative Assembly in 1946, and again in 1951. He joined the Bombay Cabinet as Minister for Public Works Department in 1949 and since 1952 is holding the portfolio of Finance, Prohibition and Industries.

He was elected President, Indian Medical Association, for 1930-31, and re-elected for 1942-43 and 1944-45. Though re-elected Dr. Mehta could not assume the responsibilities because of having been incarcerated in the year 1942. He was the President of the Association of Physicians in India, 1945. He was the Chairman, Pharmaceutical and Drugs Committee of the Council of Scientific and Industrial Research, 1945-50. Over and above his work as a Minister, his advice as a member of the Board of Scientific and Industrial Research (since 1944), member of Advisory Committee, All-India Medical Institute, New Delhi, Scientific Advisory Board of the Indian Council of Medical Research (since 1953) and Atomic Research Committee of the Scientific and Industrial Research Council (since 1951) is keenly sought for.

During 7 years' stay in England he formed the London Indian Association, an organisation of Indian students, and was elected its first president; also conducted students' movement there; served late Gopal Krishna Gokhale and Gandhiji in England during their sickness (1940-44); joined Indian National Movement of 1932 and was imprisoned by British Government in 1942.

Sir Nilratan Sircar, Kt., M.A., M.D., D.C.L., LL.D.,

was born in 1861 in a humble family in the village of Netra near Diamond Harbour, West Bengal. He qualified as a sub-assistant surgeon from the Campbell Medical School, and then took the B.A. degree of the Calcutta University. He served as the Headmaster of the Chatra H. E. School for some time till his admission into the Medical College in 1885. He graduated in Medicine in 1888, took his M.A. and the Doctorate in Medicine of the University of Calcutta.

Sir Nilratan believed that Indian young men studying medicine should be taught by Indians and with that end in view, he together with the late Drs. R. G. Kar and Suresh Prosad Sarbadhikary, started an institution in Calcutta, the first non-official institution of its kind in the whole of India. This was the nucleus around which the present R. G. Kar Medical College was built. His connection with the Indian Medical Association was intimate for a long time. He was elected President of the Association in 1931. He was one of the founders of the Journal of the Association, which made its appearance in 1930 under his editorship. He was the Vice-Chancellor of Calcutta University from 1919 to 1921. In 1920 he attended the Congress of Universities of the Empire in London as a delegate of the Calcutta University and received the honorary degrees of D.C.L. of Oxford University and LL.D. of Edinburgh University.

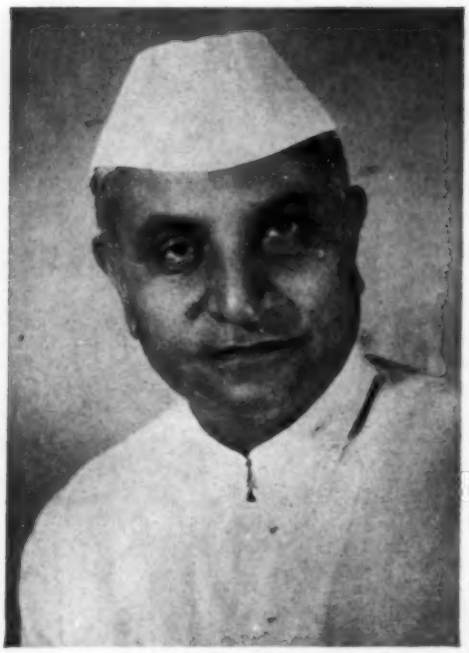
Throughout his life Sir Nilratan took an active interest in politics and had been a delegate to the Indian National Congress since 1890. He was in the Bengal Legislative Council from 1912 to 1927. He did his work in the Council in his usual thorough way and devoted much time. A Knighthood was conferred on him in 1918.

Sir Nilratan died at Giridih on the 18th May, 1943.

PRESIDENTS OF THE INDIAN MEDICAL ASSOCIATION

G. V. DESHMUKH
1928-29

B. C. ROY
1929-30, 1937-38



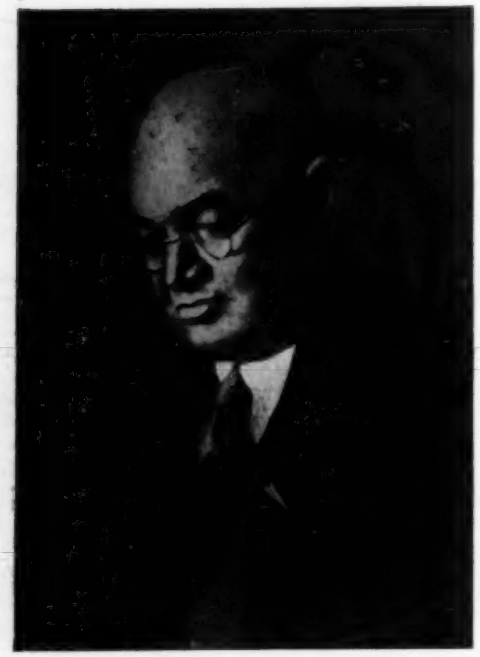
JIVRAJ N. MEHTA
1930-31, 1944-45

NILRATAN SIRCAR
1931-32

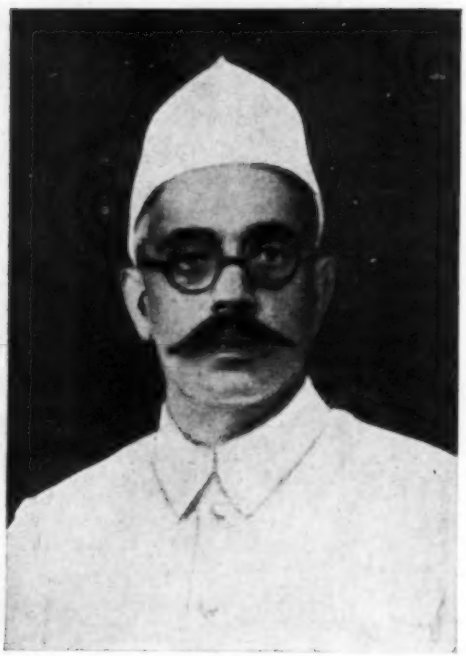
PRESIDENTS OF THE INDIAN MEDICAL ASSOCIATION

M. G. NAIDU
1932-33

M. A. ANSARI
1933-34



BHOLANAUTH
1934-35



U. RAMA RAU
1935-36

M. G. Naidu, M.B., C.M., Major,

took upon himself to organise the profession in the South under the banner of the Indian Medical Association and laboured hard to get a foothold for it in the State of Hyderabad. He was in the Nizam's Medical Service. His resourcefulness and organising ability made it possible for the Association for the first time, so far, in a state under the princely order of the British regime, to hold the annual All-India Conference at Hyderabad.

He was bestowed the highest honour the medical profession of our country could give by electing him as President of the ninth Medical Conference held at Lucknow in 1932.

In the field of social reform also he was a pioneer.

He accepted as his partner in life the 'Nightingale of India' Srimati Sorojini *née* Chattopadhyaya.

Major Naidu died at Hyderabad (Deccan) on the 12th February, 1951.

Mohammad Ali Ansari, M.S., M.D.,

was born in 1880, and came of a family of physicians, notable for their grace, culture, charity and learning. After graduating from the Hyderabad College, Deccan, he joined the medical courses at Edinburgh in 1901, where he obtained the highest degrees in Medicine and Surgery. Soon after his return to Delhi in 1911, he was called upon to lead a medical mission to Turkey, then at war, and here he did yeoman service in relieving the sick and the wounded.

His book *Regeneration in Man* is an ample evidence of his painstaking and methodical ways.

Dr. Ansari, in spite of his growing professional engagements, threw himself into the movement for relieving the distress of the people. A leading political figure of his time, he became a member of the Working Committee of the Indian National Congress and its President later on. He was elected as President of the Indian Medical Association in 1933.

Dr. Ansari died in 1936.

Bhola Nauth, M.R.C.S., L.R.C.P., C.I.E., Col., I.M.S.,

was born in the Punjab in 1866, coming of a Rajput family. Col. Bhola Nauth had his medical education in England, where he qualified for the M.R.C.S. and L.R.C.P. in 1893. In 1894 he entered the Indian Medical Service. From 1902 to 1904 he was in Somaliland. He went to Persia and after serving there till 1913 returned to India. During the war he served in Rangoon and Mesopotamia. He was mentioned in despatches for his meritorious services during the war and was decorated with the title of C.I.E. He served on the Lovatt Committee. From 1919 to 1924 he served on the Selection Committee for the Indian Medical Service. He was the Secretary of the Red Cross Society and the St. John Ambulance Association. After retirement he enlisted himself in 1927 as a member of the Indian Medical Association, of which he was elected President in 1934.

Col. Bhola Nauth died in 1936.

U. Rama Rau

set up his practice at Madras in 1899 and soon established himself as a kind doctor readily accessible to all and came to be acclaimed as the "poor man's doctor".

As a public health worker and propagandist, Dr. Rama Rau had few equals and to him is due all the credit for creating an interest in the public in matters pertaining to personal hygiene and community health, by means of his numerous talks, lectures, and by the strenuous fights as a City Father of the Corporation of Madras.

During the first world war, Dr. Rama Rau organised Ambulance Units and was awarded the "Silver Donat". He took a prominent part in the organisation and equipment of the Hospital Ship "Madras" in 1917.

He was a member of the Madras Legislature, either in the upper or the lower house during many long years. He founded the medical journal *Antiseptic* and his editorials in it from time to time since 1904 to the date of his death, will bear eloquent testimony to his erudition and abilities. He also founded and edited the *Health*, a health magazine for the people. His charity was of the silent type and his left hand did not know what his right hand gave. He was an ardent lover of music.

Dr. Rau was a foundation member of the Association. He was elected President of the Association in 1935.

Dr. Rama Rau died on May 12, 1952.

B. N. Vyas, M.B., Rai Bahadur,

hailing from Lucknow, was a prominent member of the Indian Medical Association. He was the President of the Indian Medical Association for 1936-37, and presided over the deliberations of the the 13th All-India Medical Conference held at Karachi. He was the Vice-President of the Medical Council of India and for some time the Treasurer of the University of Lucknow.

Dr. Vyas died in 1947.

George Da'Silva, L.M. & S., L.R.C.P. & S., L.R.F.P.S., D.P.H. & D.T.M. H.,

belonged to a very respectable Goanese Christian family of Bombay. He was born in 1882. His early education was in Bombay at the St. Xavier's High School and then at Grant Medical College. He had his higher education in medicine in Edinburgh and Cambridge. On his return in 1915 he took up an appointment in the Provincial Medical Service and resigned after seven years of service. From 1923 till the last days of his life in 1955 he worked for the people, lived for the people and actually died in harness serving the people. He had dedicated the entire life, money and all his resources for the service of the masses. He was given the greatest honour by his colleagues when he was elected President of the All-India Medical Conference at Meerut in 1938.

Dr. Da'Silva died on the 29th December, 1955.

Bhupal Singh, B.A., M.B.,

was born on the 29th February, 1878. He belonged to a zemindar family of Bijnor district, U.P. After passing his M.B. examination, he was appointed a Lecturer at Government Agricultural College, Kanpur, and then at Agra Medical College. He resigned from service in 1912 and started independent practice in Meerut. He joined the Indian National Congress in 1920.

Dr. Bhupal Singh founded the Meerut Medical Association, now Meerut branch of the I.M.A. and the Garvie Medical Library. His contributions in the matter of revision of Association rules will long be remembered.

He was a member of the Medical Council of India. Dr. Bhupal Singh was elected President of the Indian Medical Association in 1939 and presided over the 16th session of the All-India Medical Conference held at Lahore. He was the President of the All-India Jat Mahasabha.

Dr. Bhupal Singh died in 1952.

Kumud Sankar Ray, M.A., B.Sc., M.B., Ch.B.,

belonging to the Zemindar family of Teota, Dacca, was born in Calcutta in 1892. He entered Medical College, Bengal, in 1911, but left for the United Kingdom for further medical studies the same year. He obtained the M.B., CH.B. (1915), B.SC. and M.A. degrees of the Edinburgh University.

On his return to India in 1918 he joined the present R. G. Kar Medical College as Assistant Professor of Zoology. In 1921 he joined the non-co-operation movement. As a part of the nationalist programme Deshbandhu C. R. Das founded the National Medical College in Calcutta and called Dr. Ray to become its Secretary and also Professor of Surgery.

In 1925 Dr. Ray was elected to the old Bengal Legislative Council.

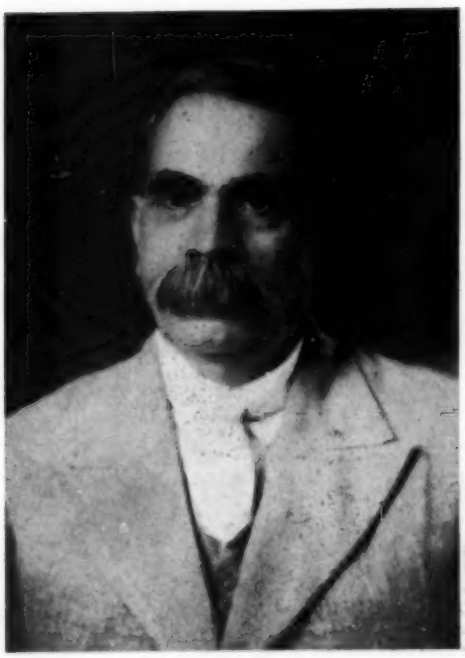
Dr. K. S. Ray was one of the founder members of the Jadabpur Tuberculosis Hospital and was its Secretary-Superintendent till his death.

Dr. K. S. Ray was one of the Jt. Secretaries and then the General Secretary of the I.M.A. between 1928 and 1940. He was elected President of the Association, a distinction he held for two years (1940, 1941). In a sense, the Indian Medical Association is the handiwork of Dr. Ray. He had been connected with the Medical Council of India since 1933 as a member and became its President in 1949. He was the Editor of the *Journal of the Indian Medical Association* from 1942 till his death at Vellore on the 24th October, 1950.

PRESIDENTS OF THE INDIAN MEDICAL ASSOCIATION

B. N. VYAS
1936-37

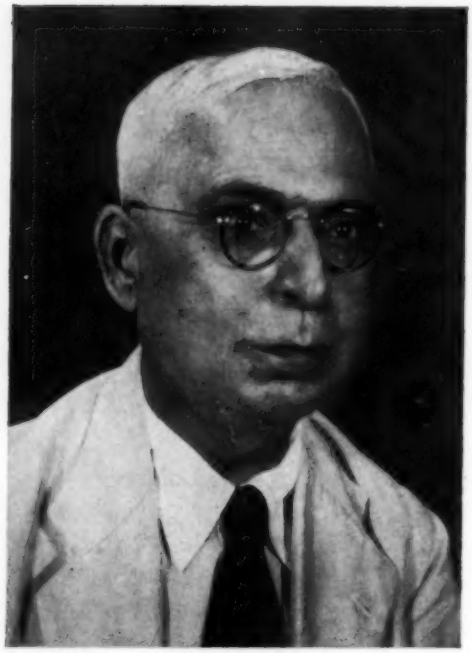
GEORGE DA'SILVA
1938-39



BHUPAL SINGH
1939-40

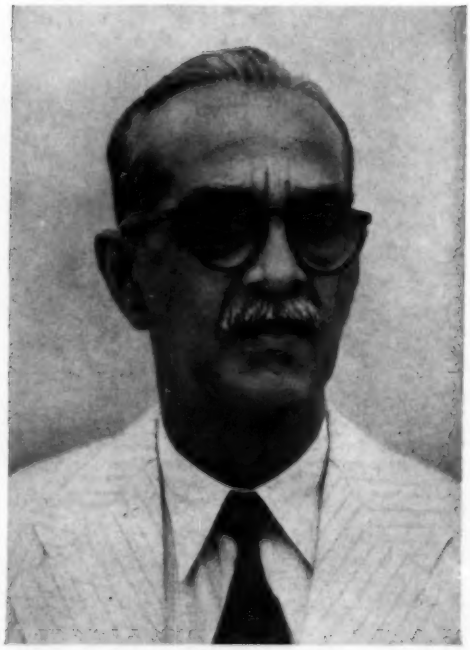
K. S. RAY
1940-41, 1941-42

PRESIDENTS OF THE INDIAN MEDICAL ASSOCIATION



R. A. AMESUR
1942-43, 1945-46

S. N. KAUL
1943-44



P. B. MUKERJI
1946-47

AMIR CHAND
1947-48

Rochiram A. Amesur

was born in humble surroundings at Karachi, on 25th September 1885. He qualified from Hyderabad (Sind) Medical School in 1906. After qualifying, he joined Government Service but resigned after four years to free himself from the shackles of service and to take up independent practice at Karachi. From his early days, he was devoted to public work. In 1906 he joined the All India Hospital Assistants Association (later on called as All India Medical Licentiates Association), which had just then been formed. He rendered active help to the Association and worked hard to improve the lot of the Licentiates.

Dr. Amesur, at great risk of being charged for defamation, brought out a booklet under the title of *Karachi Civil Hospital Scandal* in 1924 wherein were revealed the details of how I.M.S. Officers used to take money from patients in distress.

Dr. Amesur was the guiding spirit of the Karachi Medical Association having worked as its Secretary from its inception for about 15 years and later becoming its President.

He became one of the Vice-Presidents of the Indian Medical Association in 1940-41, and was called upon to preside in April 1943 at the Patna Conference. He again became the President of the I.M.A. for 1945-46 and presided at the Amritsar Conference.

Partition of the country made him leave the place of his birth and thus sever his connections with various institutions in Sind.

At the age of 72, he is still active and takes a leading part in the deliberations of the Indian Medical Association.

S. N. Kaul, M.B., Ch.B., Rai Saheb,

was elected a Joint Hony. Secretary of the Indian Medical Association in 1932-33 and 1933-34 and President of the Indian Medical Association in 1943. He presided over the XX All-India Medical Conference held at Ahmedabad in December 1943.

Phani Bhusan Mukerji, B.Sc., M.B., D.M.R.E., F.R.C.S., F.F.R., Capt. I.M.S. (Retd.),

was born on 23rd October, 1889, at Sahibgunj, Sontal Parganas, Bihar. After passing B.SC. with distinction from the Presidency College, Calcutta, in 1911 he graduated in Medicine from the Medical College, Bengal in 1917. He accepted a temporary commission in the I.M.S. in July, 1917, and was in Active Service in Bushire (South Persia), Egypt, Palestine and North-West Frontier of India. He retired from the I.M.S. in 1921 and took up general practice at Allahabad. He joined Bihar and Orissa Medical Service in October, 1922, and was attached as Teacher to Temple Medical School at Patna and as a Radiologist to Patna General Hospital. Later on he obtained D.M.R.E. (Cambridge University) in 1925 and F.R.C.S. (Edinburgh) in April, 1926. He retired from the Provincial Medical Service in 1937 and joined the Chittaranjan Seva Sadan and Jadabpur Tuberculosis Hospital, Calcutta, as a Radiologist. He is one of the founder-members of Patna Medical Association (1923). He was also Editor, *Patna Journal of Medicine* (1934-35). A Founder-Member, Indian Medical Association (1928), he was the Honorary General Secretary, I.M.A., from 1940 to 1946 and was elected President of I.M.A. in 1946. He was elected Fellow, Faculty of Radiologists (London), in 1942, and a Fellow, International College of Surgeons, in 1945. He is at present the Dean of the Faculty of Veterinary Science, Calcutta University and Medical Director, Hydro-Radiological Institute, Chittaranjan Seva Sadan, Calcutta.

Amir Chand, F.R.C.P., Lt.-Col., I.M.S. (Retd.),

was elected President of the Indian Medical Association in 1947. He became the General Secretary in the year following. He was the President of the Cardiological Society of India in 1954. After retirement from the Indian Medical Service he served as Principal of the Balakram Medical College, Lahore.

As a consequence of the partition of India, he was forced to leave Lahore. Subsequently his abilities as a physician were fully utilised in relief work at the refugee camp at Kurukshetra near Delhi.

Col. Amir Chand has donated a number of annual prizes for the best published essays in different medical subjects.

Sarat Kumar Chaudhuri, B.A., M.B., M.B.E., Capt. I.M.S. (Retd.),

coming from a family which had migrated from Birnagar (Ula), Nadia, Bengal, to U. P., was born at Banaras on October 4, 1881. Graduated in 1902 and was admitted to the Medical College, Lahore. Passed his M.B. examination in 1907. He joined Provincial Medical Service and resigned after six years in the year 1913. In April 1914 he received an offer of service from Banaras State which he accepted. In 1916 he served as a commissioned officer and was awarded M.B.E. in 1918 for war services. He served as Chief Medical Officer of Banaras State for twenty-one years and was conferred the title of "Honorary Sirdar". He took an active part in organising the Medical Association, Banaras. He presided over the U.P. Medical Conference at Allahabad in 1936. He was elected the President of the Silver Jubilee Session of the All-India Medical Conference, Calcutta, 1948. At present he is the Honorary Chief Editor of the Hindi health magazine *Apka Swasthya* published by the local Branch of the I.M.A.

Chamanlal M. Mehta, M.B.B.S., F.R.F.P.S., L.M.,

was born at a village of Vadi in Panch Mahals District of Bombay State on 26-2-1893.

He graduated in Medicine from Grant Medical Colledge, Bombay, in 1919 and had postgraduate training in the United Kingdom, Ireland and Germany from 1920 to 1923. Later he joined the medical profession in Bombay as an obstetrician and gynaecologist.

He was elected President, Indian Medical Association, in 1949. He has also been President of the All India Obstetric and Gynaecological Congress.

Tridib Nath Banerjee, M.B., M.R.C.P., D.T.M. &H., C.I.E., Rai Bahadur, M.L.C.,

was born in 1889 at Bhagalpur, brought up in Monghyr his home, studied in Monghyr College up to 1909. After passing the M.B. examination from Medical College, Bengal, in 1915, he entered the Bihar Medical Service, and served as a teacher in Cuttack Medical School up to 1924. On return from England in 1926, he was appointed Professor of Pharmacology, Patna Medical College. Became Professor of Medicine in 1932, was appointed Principal of Patna Medical College in 1939 and continued in both the capacities till he retired in 1946. In recognition of his services, he was made Rai Bahadur in 1939 and C.I.E. in 1945 by the then Government. In January 1950 he was appointed Honorary Physician to the President of India.

He was elected President of the Indian Medical Association in 1950.

He presided over the 7th conference of Association of Physicians of India in 1952.

Dr. Banerjee was a member of the Upgrading Committee in 1948-49, a member of the Pharmaceutical Enquiry Committee in 1954-55 and a member of the Advisory Committee of the Central Medical Institute for Postgraduate Studies and Research (1954-55). He is a foundation member of the Indian Medical Council and still continues as a member of its Executive Committee.

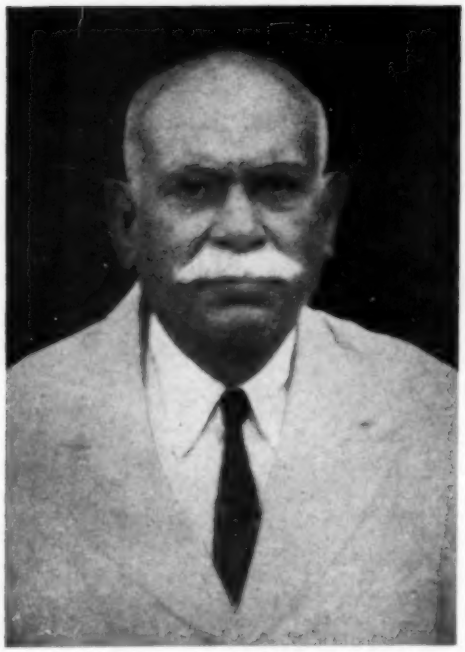
He is a sitting member of Bihar Legislative Council.

T. S. Tirumurti, B.A., M.B., C.M., D.T.M. & H. Rao Bahadur,

was born on the 28th of November 1885. Educated at Madras and London, he took the B.A. and M.B. & C.M. of the former and D.T.M. & H of the latter university. He entered the Madras Medical Service and soon became Professor of Pathology in the Madras Medical College. In 1930 he acted as the Principal of the Andhra Medical College at Visakhapatnam and in 1931 he acted as the Vice-Chancellor of the Andhra University. On the Royapuram Medical School being raised to the status of a college as Stanley Medical College, Dr. Tirumurti was appointed the first Principal, a position he held until his retirement. He took an active part in the work of the Indian Medical Association and was elected President in 1952.

Dr. Tirumurti died on August 26, 1953.

PRESIDENTS OF THE INDIAN MEDICAL ASSOCIATION



S. K. CHAUDHURI
1948-49

CHAMANLAL M. MEHTA
1949-50

T. N. BANERJEE
1950-51

T. S. TIRUMURTI
1951-52

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PRESIDENTS OF THE INDIAN MEDICAL ASSOCIATION

B. V. MULAY
1952-53

S. C. SEN
1953-54, 1954-55

A. C. UKIL
1955-56

C. S. THAKAR
1956-57

Bhalchandra Vaman Mulay, M.S.,

is an eminent surgeon of Sholapur. He is a strict disciplinarian, an ardent nationalist and a great believer in efficiency. He has great organising abilities. Dr. Mulay was elected President of the Indian Medical Association in 1952 and presided at the Patna session of the All-India Medical Conference.

Satish Chandra Sen, B.Sc., M.B., D.M.R.E., Capt. I.M.S. (Retd.),

was born on 1st September, 1895, at Khulna in Bengal. He obtained the B.SC. degree of the Calcutta University in 1915 from Presidency College, Calcutta. He graduated in Medicine in 1920 from Medical College, Bengal. He passed D.M.R.E. of Cambridge University in 1926. He was elected a Fellow, American College of Radiology in 1950. From 1920 to 1925 he was in the Indian Medical Service and worked as the X-ray Specialist, R.A.F. Indian Hospital, Baghdad.

He was elected Hony. General Secretary of the I.M.A. in 1949-50 and continued till 1952-53. He was elected President of the Indian Medical Association twice in 1953-54 and 1954-55. He is a past President of the Indian Radiological Association. He is a member of the Council of World Medical Association and Secretary for Asia from 1947 to date. He represented the Indian Medical Association at the Commonwealth Medical Conferences in London, Saskatoon and Brisbane and acted as an adviser to the Indian delegation to W.H.O. Assemblies in 1948 and 1949.

Amulya Chandra Ukil, M.B., M.S.P.E., F.N.I.,

after a distinguished career in the Medical College, Bengal, graduated in Medicine from the Calcutta University in 1914. He devoted the early years of his professional life to the study of pathology and bacteriology and was Professor of Bacteriology, National Medical Institute, Calcutta, for several years. Thereafter, at the request of the late Professor Calmette, he took up the study of tuberculosis as a career and a mission. He was honorary senior visiting physician of the Department of Chest Diseases, Calcutta Medical College Hospitals, for nearly 25 years. Later he was appointed as the Principal and Superintendent of the same institution.

He is a pioneer worker in the field of tuberculosis in India. He has devoted 30 years to the study of tuberculosis and other diseases, and his contributions have materially added to the knowledge on the subject. He has made significant contributions to the development of the concept of Social Medicine in India.

In his youth, Dr. Ukil was connected with the revolutionary movement and was interned for nearly two years during the First World War. After this, his efforts were devoted to social service, rural reconstruction and planning.

In recognition of his public service he was appointed Sheriff of Calcutta in 1955. He is a member of many social and scientific bodies, such as Standing Technical Committee, Tuberculosis Association of India. He was President, All-India Tuberculosis Workers' Conference (1949); Member of Council, Indian Institute of Science, Bangalore; Member of the Scientists' Panel, Indian National Planning Commission. He was President of the Medical and Veterinary Section of the Indian Science Congress in 1941, President of the National Institute of Sciences of India in 1956 and President, Indian Medical Association for 1955-56.

C. S. Thakar, L.M. & S.,

has been elected President of the Indian Medical Association for the year 1956-57. He was attached to the Department of Physiology, Grant Medical College, Bombay, and is a Past President of the Bombay State Branch, Indian Medical Association.

We regret we have not been able to secure the biographical details of all our Presidents. For supplying material about Dr. Da'Silva's life sketch we are indebted to Sri R. P. Guru, Jt. Editor, Vasudha, Jabalpur.

—ED., J. Indian M. A.

HISTORY AND PROGRESS OF THE INDIAN MEDICAL ASSOCIATION

P. K. GUHA, M.B. (CAL.), M.R.C.S. (ENG.), D.O.M.S. (LOND.)

Hony. Editor, Journal of the Indian Medical Association

INTRODUCTION

The medical practitioners of India have, for a long time, felt the need of an Association which would protect their interests and the future of medicine and health in this country. Two conferences of medical men in India were held, one at Bombay and the other at Calcutta, in the 19th century. These were more or less of academic nature and were predominated by official influence. Reliable and documentary evidences of these conferences are not available now.

For the sake of history, it must be mentioned that the name "Indian Medical Association" was used originally by an all-India body of medical men in 1895 with its headquarters in Calcutta. Its President was Rai Bahadur Dr. Lal Madhab Mukherji, L.M.S., F.C.U., and its Secretary was Dr. J. R. Wallace, M.D., F.R.C.S. The latter was also the Editor of the *Indian Medical Record*, the official organ of that body (*vide* the Medical Register and Directory of the Indian Empire, 1898).

BIRTH OF THE ALL-INDIA MEDICAL CONFERENCE

In the second decade of the 20th century, there was a growing urge among the members of the independent medical profession to free themselves from the stranglehold of alien domination, under which the profession was groaning since the early days of the British rule in India, as a result of the hybrid system of medical education, watertight compartmental division of medical services and the inherent difficulty of a subject people to promote medical science conducive to national welfare.

This urge manifested itself in the first systematic attempt to organise an All-India Medical Conference which was held, at the initiative of the now defunct Bengal Medical Association, in the year 1917, at the Carmichael (now called R. G. Kar) Medical College, Calcutta. Lt. Col. Raghavendra Rao, D.SC., was the President of the Conference and Sir Nilratan Sircar, KT., M.A., M.D., LL.D., D.C.L., was the Chairman of the Reception Committee.

Sir Nilratan aptly described the objects of the Conference as:

(i) to examine closely some of the important facets of articulation of the structure of our profession with the society;

(ii) to examine also the minute anatomy of the organisation of our profession, in order to detect whether the condition is normal or it is pathological from neoplasm or microbes within or from mechanical pressure without;

(iii) to formulate ways and means for its healthy unimpeded recovery, growth and progress towards its noble ideal; and

(iv) to determine the forces that cohere its different units and thus help to focus the scattered energies of its units towards a common object.

The second All-India Medical Conference was held at Delhi in 1918, under the presidency of Sir Nilratan Sircar and with Dr. J. K. Sen as the Chairman of the Reception Committee. The third All-India Medical Conference was held at Amritsar in 1919, under the presidency of Dr. M. N. Odhedar. The fourth All-India Medical Conference was held at Nagpur in 1920, under the presidency of Rao Bahadur Dr. Maharaj Kissen Kapur and with Dr. G. R. Tambe as the Chairman of the Reception Committee.

BIRTH OF THE INDIAN MEDICAL ASSOCIATION

The fourth Conference was followed by a period of torpor for eight years, but this interval was really the period of preparation. The medical profession began to cherish and cultivate a new and burning faith in themselves and in their own leaders to guide them in future. Political developments of the third decade of the 20th century, particularly the historic decision of the General Medical Council of the United Kingdom on the non-recognition of certain medical degrees conferred by Indian universities on flimsy pretext, the Report of the Committee presided over by Sir Walter Fletcher on the organisation of Medical Research in India and the Government's proposal to create a more or less official-controlled All-India Medical Council brought this feeling to a climax. A meeting of the members of the medical profession was held on the 30th July, 1928 under the auspices of the Bengal Medical Association. Dr. Sundari Mohan Das occupied the chair. There was a great deal of discussion regarding various matters affecting the medical profession including the bill for the amendment of the Bengal Medical

Act, 1914. At another meeting of the medical profession of Calcutta and its suburbs held under the auspices of the Bengal Medical Association on the 30th August, 1928, it was arranged to hold the fifth All-India Medical Conference at the National Medical Institute, Calcutta, during the Christmas week of 1928. Dr. G. V. Deshmukh, L.M.S., F.R.C.S., of Bombay, presided over this Conference and Sir Nilratan Sircar was the Chairman of the Reception Committee.

In a statement to the newspapers issued by several leading medical men on the eve of this Conference it was stated:

"The proposals (of the then Government of India), if carried out, will affect every individual medical man in India to a serious extent. The Central Government will have absolute administrative control over medical education, medical ethics and other matters vitally affecting the medical profession. There will also be shortly considerable political readjustments which will bring about radical changes in the administration of the country. The medical and public health departments and the medical services in India will be affected and brought under popular control. The public will have to consider the medical and sanitary needs of the country and it becomes necessary for the medical profession in India to organise itself so that it may be in a position to help in the solution of the various problems and direct the change along right and effective channels."

"The medical profession, on account of its disorganised condition, is unable at the present moment to exert that influence which is its duty and its privilege to exercise. It has its duties towards the profession as well as towards the public and it must take its rightful place in shaping public opinion and guiding it in the administration in a manner similar to that enjoyed by the medical profession of other countries."

The urgent necessity of organising the profession was so keenly felt at this Conference that the following resolutions were moved from the chair and passed unanimously on the 28th December, 1928:

"Resolved that an All-India Medical Association be formed with the object of looking after the interest of medical education, public health and the medical profession in India and that this body be duly registered under Act 21 of 1860.

"That provincial branches be formed in every province with branches in districts and other important centres.

"That a committee be appointed to settle the details of the constitution, etc., and to take the necessary preliminary actions regarding organisation, registration, etc.

"That the following members with powers to add to their number be elected as members of the provisional committee:

President:

Dr. G. V. Deshmukh.

Vice-Presidents:

Sir Nilratan Sircar,
Dr. B. C. Roy.

Treasurer:

Dr. J. N. Moitra.

Secretaries:

Dr. Kumud Sankar Ray (Calcutta),
„ Aghore Nath Ghosh (Calcutta).
„ D. D. Sathaye (Poona).

Members:

Dr. Sundari Mohan Das,
„ Charu Banerjee,
„ B. L. Majumder,
„ A. D. Mukharji,
„ S. C. Sen Gupta,
„ Santiram Chatterji,
„ N. N. Basu,
„ K. M. Bose,
„ A. C. Ukil,
„ U. Rama Rau (Madras),
„ A. Said (Karachi),
Capt. R. S. Gupta (U.P.),
Lt. Col. A. H. J. Gidney (Madras),
Dr. Rewa Chand (Karachi),
Capt. P. B. Mukerji (Patna).

Five members to form a quorum.

"That the Head Office of the All-India Medical Association be located in Calcutta for the first five years.

"That the next annual meeting of the Conference be held at a place to be decided later on.

"That the Association will have its own Journal."

This led to the formation of an organisation—the "All-India Medical Association" which aimed at representing the entire medical profession of India. This was a new voice heard for the first time in the history of scientific medicine in our country, and this voice raised the hope in a thousand breasts that if only the medical men of India could unite and organise, speak and act from a common platform, there was every possibility of equalling or even excelling the achievements of organised British, American and other foreign medical associations. Leading members of the local medical clubs and societies at Calcutta, Bombay, Madras, Patna, Delhi and other cities in India took an active part in the formation of this All-India medical organisation.

In 1930, the All-India Medical Association was renamed the Indian Medical Association. Since then, our All-India Medical Conferences have usually been held in the month of December. The Association Year, however, begins on the first of October, every year.

Constitution

The constitution of the Indian Medical Association was based on the broadest democratic principles. Any person possessing qualifications in scientific medicine, as per clause 2 of the Indian Medical Degrees Act, 1916 (Act VII of 1916), registrable in India, by the provincial councils of medical registration, is eligible for membership. Indian nationals, possessing foreign qualifications in scientific medicine which are not yet registrable in India by the Medical Council of India, may also be eligible as members on their qualifications being approved of, by the Association. Membership of the Association is, therefore, open to the medical graduates as well as licentiates, members of the Government services as well as of the independent medical profession.

Branches of the Association have been established throughout the country. The work is carried on by the Honorary General Secretary of the Association, under the guidance of the Working Committee with a majority of elected representatives of the State or Territorial Branches. From the year 1946-47, the Working Committee was constituted in accordance with the new rules with a large majority of elected representatives of the provincial branches, as members of the committee. The State or Territorial branches are consulted on all important matters discussed by the Working Committee, at its meetings held 3 or 4 times a year. The Central Council, which is the highest authority of the Association, consists of the office-bearers and the elected representatives of all the Local Branches having a minimum membership of 10. The Central Council meets only twice a year, both the meetings being held during the annual session of the All-India Medical Conference, passes the annual report, audited accounts and the budget and elects the Honorary General Secretary and other office-bearers of the I.M.A. as well as the Editor, the Asst. Editors and members of the Journal Committee. The President and three Vice-Presidents are elected every year by the majority vote of the members of all the Branches and they assume office on the first day of the Annual Conference.

The Central Office (all-India headquarters) is now situated at the Hanging Bridge, Faiz Bazar, in Daryagunj, Delhi, 7. It was at first located in Calcutta, at 6-A, Corporation Street, then at 67, Dharamtala Street from August, 1931 to April 1938 and then at 12, Samavaya Mansions till December, 1943 and then at 23, Samavaya Mansions, Corporation Place, Calcutta 13 till January 1949. The Central and State or Territorial offices are maintained by the Central Fund contribution from the local branches fixed at Rs. 8/- per member per year. The Association is registered under the Societies Act XXI of 1860.

During the year 1948-49, in January 1949, the Central Office of the Association was removed from Calcutta to Delhi as per resolution passed at a meeting of the Central Council held at Delhi in the year 1946-47 and as per direction of the annual meeting of the Central Council held at Calcutta in December 1948. The Journal Office was separated from the Central Office in January, 1949 and the Journal office was located at the old Central Office at 23, Samavaya Mansions, Corporation Place, Calcutta 13.

The Local Branches are, more or less, autonomous in their management. They are entitled to formulate their own Rules and Bylaws which should, of course, be based on the aims and objects of the Association. In matters concerning the Government, the Local Branches have to refer the same to the State Branches which can deal with subjects concerning the respective State Governments. In case of matters pertaining to the Government of India, the Territorial or State Branches have to refer the same to the Working Committee through the Honorary General Secretary for final decision and necessary action. The Local Branches are also free to fix any sum as the annual subscription for their Branch Members, but the Local Branches are liable to pay, to the Central Office, through the Territorial or State Branch Office, a sum of Rupees Eight only, per member per year, as the Central Fund Contribution. The membership subscription varies from Rs. 10/- to Rs. 12/- per year in an outlying branch, to Rs. 18/- to Rs. 36/- per year in the big city branches. Every branch has to pay Rs. 8/- per member per year as the Central Fund Contribution. Out of this Rs. 8/-, Rs. 3/- goes to the Territorial or State Branch, and Rs. 4/- to the Central office for maintaining its office and organisation. Only Rupee one out of Rs. 5/- received by the Central Office, i.e. out of the total annual subscription of every member goes to the Journal Fund.

The Central Council of the Association has changed the Constitution of the Association. The New Constitution of the Association is divided into three parts—1. Memorandum of the Association, 2. Rules, and 3. Bylaws. The first part deals

with the aims and objects of the Association and will probably require no further change, hereafter. The second part deals with the general principles of management of the Association and as such it is not expected to be altered, except on rare occasions. The questions relating to the details of the management, the rates of subscription and central fund contribution etc. which require alterations from time to time have been included under the category of Bylaws.

Journal

The Association has its own Journal. The monthly Journal, at first called the *Indian Medical World* was actually started in March, 1930 under the inspiration and guidance of late Sir Nilratan Sircar. Subsequently, in September, 1931 its name was changed to the *Journal of the Indian Medical Association*. It is the best general medical journal in India and has shown a steady improvement every year. Every member of the Association gets a copy of the Journal, free of charge. The Editor, the two Assistant Editors, the Secretary and Members of the Journal Committee are still working on a purely honorary basis.

The three previous Editors late Sir Nilratan Sircar, late Dr. K. S. Ray and Dr. A. D. Mukharji did their best to raise and maintain the standard of the Journal of the Indian Medical Association and paved the way to its present position.

Fortnightly Journal of the I. M. A.—Dr. P. K. Guha, the present Hony. Editor of the Journal of I. M. A. placed his final scheme of converting the monthly Journal of the I. M. A. into a fortnightly one, at the meeting of the Working Committee of the Association held at Jaipur in July 1954. The Journal is being published regularly, twice a month, instead of once, from October 1954, on the first and sixteenth of every month. Moreover, for the benefit of the large number of general practitioners amongst the members, subscribers and other readers, a "Refresher Course" section with articles written specially for the purpose by experienced professors of medical colleges and other experts was also added as a special feature from October 1954 for over a year. These contributions have subsequently been revised and published in book form in two volumes during the years 1955 and 1956.

Health Journal—A new monthly health journal, *Your Health* is being published by the Association since January, 1952 from the office of the Journal of the I. M. A. in Calcutta, for propagation of health education amongst the people of India.

Membership and Progress

Since the foundation of the Association, its branches and membership have progressed by leaps and bounds and, within a course of twenty eight years (1928-29 to 1955-56), it has become the greatest and most representative national medical organisation of this country. The Association started with 222 members in the year 1928-29 and has now (December 1956) about 20,000 members on the roll in 19 State and Territorial and 508 Local Branches. Due to the partition of India into the Indian Union and Pakistan, the Association had to lose 1 Provincial and 50 local branches, with a loss of 1,201 members. The following membership chart will convey an idea of the rapid progress of the Indian Medical Association from the year 1928-29 to 1955-56.

S. No.	Association Year	No. of Members
1	1928-29	222
2	1929-30	468
3	1930-31	548
4	1931-32	816
5	1932-33	1,059
6	1933-34	1,117
7	1934-35	1,533
8	1935-36	1,806
9	1936-37	2,147
10	1937-38	2,716
11	1938-39	3,366
12	1939-40	4,056
13	1940-41	4,554
14	1941-42	5,280
15	1942-43	5,691
16	1943-44	6,467
17	1944-45	7,843
18	1945-46	9,723
19	1946-47	10,755
20	1947-48	10,491
21	1948-49	13,117
22	1949-50	12,305
23	1950-51	13,609
24	1951-52	14,587
25	1952-53	15,573
26	1953-54	16,608
27	1954-55	17,781
28	1955-56	18,941

Activities and Achievements

In a short resume of this nature, it is almost impossible to give the details of all the varied activities of the Association since its inception. However, in the very first year of its existence (1929) as a result of efforts, the Government's proposal to create the officially controlled All-India

Medical Council and to appoint a British I. M. S. officer as Commissioner of Medical Education was rejected by the Standing Finance Committee of the Government of India.

Indian Medical Council—In 1931, the outstanding subject was the Indian Medical Council Bill. The danger of divided counsels was fully realised and the Central Council proceeded to gather opinion, held meetings and submitted a comprehensive set of recommendations to the Government of India. The Association pressed for an All-India Medical Register and inclusion therein of the Licentiates. In the opinion of the Association, the Bill, as drafted by the Government, made the constitution of the Council practically futile and considerable criticism was directed against the suggestion of a nominated President and the strength of official representation. Propaganda and activity on the part of the Association continued unabated during 1933, when it was introduced in the Assembly, and though the final version (the Indian Medical Council Act, 1933) did not meet the wishes of Indian medical men, it must be ascribed largely to the efforts of the Association that certain improvements were effected.

It is a matter of great satisfaction to record that Dr. B. C. Roy, an ex-President of this Association, was unanimously elected as the first non-official elected President of the Medical Council of India in October, 1939. Subsequently Dr. K. S. Ray, another ex-President was also elected as its President.

Amendment of the Indian Medical Council Act.—The Association considered, during the years 1954-55 and 1955-56, some of the provisions of the draft bill for amendment of the Indian Medical Council Act and decided to send a deputation to the Minister of Health, Government of India to impress upon her the undesirability of passing such an amendment. The provisions of the Amended Act would not only do grave injustice to the medical licentiates but would also mean much more Governmental control over medical educaton in all its aspects.

British Medical Council—In the second year (1930) the Association started an India-wide agitation by organising meetings at Calcutta, Karachi, Bombay, Lahore and other centres, protesting against the arbitrary action of the General Medical Council of the United Kingdom withholding its recognition of medical degrees of Indian Universities. Ultimately this led to the cancellation of the appointment in India of Colonel Needham as Commissioner for Medical Qualifications on behalf of the Council in India. This fact is a sufficient indication of the position of the Association as a recognised body from practically its birth.

Medical Relief in Emergencies.—The terrible earthquake in Bihar in January, 1934, was an occasion that tested the ability of the Association to deal with the medical aspects of an emergency. It had no experience of this kind before ; but the response for men, materials and money was immediate and generous and enabled the Association to rise to the occasion and render relief in the afflicted areas in a way that earned the praise from both official and public quarters. Subsequently, from year to year the Association had to arrange for medical squads to deal with emergencies arising from flood, famine, war and after-effects of partition of India.

In 1947, on hearing an appeal for medical help over the radio, from the President of the Indonesian Republic, the President of the I. M. A. suggested to the Government of India for despatching a Medical Mission to Indonesia. The suggestion was taken up by the Government and it was mutully settled that the Indian Red Cross Society would provide medical stores and equipment, and the Indian Medical Association would provide medical personnel for the Medical Mission. Chartered planes were utilised to despatch these to Indonesia.

II World War and Medical Men—In 1941-42, due to the continuance of the World War and with the appearance of Japan and U. S. A. in the eastern theatres of hostilities and the gradual march of the frontiers nearer to the eastern borders of India, there were important repercussions on developments within our country. Schemes were formulated for evacuation of families of members from places threatened by enemy action to safer zones. A uniform scheme of terms and conditions for A.R.P. services was formulated for the whole country.

In 1942, the terms and conditions offered for emergency commissions in the I.M.S. and emergency appointments in the I.M.D. were considered and the opinion of the Indian Medical Association was forwarded to H.E. the Viceroy of India, H.E. the Commander-in-Chief and other authorities concerned. Hon'ble Mr. N. R. Sarker, the then Member of the Viceroy's Executive Council, met the representatives of this Association at his residence on 14th May, 1942, to discuss the grievances of the medical profession in India *vis-a-vis* recruitment of I.M.S. and I.M.D. officers. The representatives of the I.M.A. tried to impress upon Hon'ble Mr. Sarker that all I.M.S. officers should be reverted forthwith to military side, in the first instance.

On 26-12-42, an important meeting was held between "Medical Men and Personnel" (Souttar)

Commission and the representatives of the I.M.A., at the office of the Surgeon-General, Bengal. Mr. Souttar explained the machinery existing in U.K. for recruitment of doctors to meet the army needs. Mr. Souttar, Chairman of the Mission, said that in U.K. out of about 50,000 doctors on the register, nearly 41,000 were members of the B.M.A., i.e., about 60 per cent of the total strength, and 80 per cent of members in active practice. He added that the Ministry of Health and the recruiting department were practically working through the B.M.A. in getting the required number of doctors for the army. The I.M.A. representatives made it quite clear that the I.M.A. had all along been ready to co-operate with the Government, provided the grievances of the profession were redressed and the latter were taken into confidence, and the I.M.A. which was the only organised body of the medical profession in the country, was placed on the same footing in this matter as the B.M.A. in U.K. The I.M.A. requested the authorities concerned to revise the terms and conditions of military medical service so that a steady stream of recruits could be assured. A satisfactory response of the patriotic impulse of even such non-political men as doctors could not be evoked on sentimental grounds only in view of the general political situation and until the political aspirations of the people were satisfied. Considering the political situation at that time, the I.M.A. representatives were emphatically of opinion that any form of compulsory recruitment under any ordinance would be extremely unwise and so, likely to create many unfortunate complications and alienate the sympathies of medical men in the profession.

Towards the end of 1943, the Government of Bengal approached the I.M.A. for its help in the recruitment of doctors for working in the emergency hospitals and dispensaries which the Government were opening in the epidemic affected areas of the province. The I.M.A. also organised medical relief operations independently in Bengal and Bihar.

The difficulties caused to the public by cuts in the basic ration and specially the allowance of petrol, tyres and tubes, issued to medical practitioners, engaged the attention of the Central Council. The Government of India were approached and the provincial Governments were instructed by the Government of India to invite local practitioners, if and where necessary, to set up *ad hoc* advisory committees in the matter.

The Association strongly supported the statements issued by Pandit Jawaharlal Nehru on 31-8-45, and subsequently by Dr. B. C. Roy appealing to the army authorities, specially the Americans, to hand over hospital buildings built by them in India, during the period of war, with their equipment for civilian use in this country.

Administrative Changes in India—The Annual Report of the Association for 1936-37 had alluded to the inauguration of the Government of India Act, conferring Provincial Autonomy.

On the 15th August 1947, India having attained an independent status politically the status and importance of this Association were also considerably raised.

Income Tax and Medical Men—In 1938, the Association submitted a memorandum to the Government on the Income Tax Amendment Bill which was then under consideration. It is a matter of congratulation that many of the points put forward in that memorandum have been accepted.

Life Insurance and Medical Men—There was a prolonged controversy with the Indian Life Assurance Offices' Association over the reduction of medical examiners' fees by some of the Indian Insurance Companies. When even a modest scale of fees laid down by the Association was not accepted by the Life Assurance Offices' Association, there was no other alternative left but to request the members, through the branches of the Association, not to examine any insurance case below a minimum fee of Rs. 8/-.

Drugs Act—In the year 1940, the Association submitted to the Government of India a lengthy memorandum on the Drugs Bill criticising the various provisions and suggesting improvements in the shape of concrete amendments. Some of these amendments notably those dealing with the personnel of the Drugs Technical Advisory Board and the introduction of a Joint Consultative Committee, have been accepted. The inclusion of a representative of this Association in the Drugs Technical Advisory Board is significant, for it conclusively proves, if proof were needed, that the voice of the Association is beginning to count with the powers that be. It may be recorded, with appreciation, in this connection that the late Dr. A. K. Sen of Calcutta, represented the Association in these committees and was the pioneer in guiding the Association and the Government regarding principles of the Drugs Act and the Rules framed under the Act.

In 1942-43, the Central Council offered concrete suggestions to the Government for the control and supply and equitable distribution of quinine, cinchona and its products, amongst hospitals, medical practitioners, retail pharmacists and patients. The Government of India issued the Drugs Control Order on 11-11-43.

The Government of India sought the opinion of the I.M.A. on the Indian Pharmacopoeia during the year 1945.

In March, 1946, the Pharmacy Bill (1945) was published. In April, 1946, the I.M.A. suggested a number of amendments so that the amended Bill would serve the purpose of a comprehensive and consolidated Pharmacy and Poison Act, on the line of the Pharmacy and Poison Act (1943) of Great Britain, as amended by the Pharmacy and Medicine Act, 1941.

Spurious Drugs—The Association started an agitation in the years 1954 and 1955 and impressed on the Government the immediate need of tackling this problem with necessary legislative and administrative measures. Several State Governments including the Government of Bombay and West Bengal took up the matter.

Advertisement of "Cures" in Lay Press—As a result of negotiations with the Association in the year 1954-55, the Government of India on the recommendation of the Press Commission, agreed to enact the necessary legislation for suppression of undesirable advertisements in the lay press.

Employees State Insurance Corporation—The opinion of the I.M.A. was sought by the Government of India, Labour Department, on the Sickness Insurance Scheme and Prof. B. P. Adarkar, Officer on Special Duty, met the representatives of the Association at Calcutta.

The Government of India sought the opinion of the I.M.A. on the Workmen's State Insurance Bill on 6-11-46.

In 1948, the Government of India agreed to appoint nominees of the I.M.A. on the Employees' State Insurance Corporation, and its medical benefit council.

The Indian Medical Association has taken a keen interest in this matter from the very inception in the year 1943 when Prof. Adarkar started formulating a sickness insurance scheme for groups of industrial workers on behalf of the Government of India. Subsequently the old scheme was revised and expanded and the scheme envisaged inclusion of those employees of a large number of industrial concerns throughout India who drew a salary of less than Rs. 400/- per month. The Association authorised Dr. S. C. Sen, its able president to open negotiations with the Government of India. Dr. Sen impressed on the Ministry of Labour, Government of India, that it was essential that the three parties concerned, viz., the administration, the labour and the medical profession should face the complex problems jointly and realistically.

The scheme had, in the first instance, been in operation at Kanpur and Delhi and medical relief was being provided to the insured employees through medical officers engaged on a full-time salary basis. The Association then re-iterated its previous decision and recommended to the Government and the Corporation the adoption of the "Panel system" for the benefit of the labour and the practising members of the medical profession. After a prolonged period of negotiations, the Government of India (Ministry of Labour) and the Corporation ultimately agreed to implement the scheme in Calcutta, Bombay, Madras, Punjab and other areas of India on the basis of appointment of panel doctors (with a maximum of 1000 insured workers per doctor) to render the necessary medical relief. Fresh negotiations were then started to fix the scale of remuneration for panel doctors. The Association also requested the Government and the E.S.I. Corporation to extend the scheme to the family members of the workers concerned, as soon as practicable.

Bhore Committee—In January, 1944, the Health Survey and Development Committee (Bhore Committee) appointed by the Government of India sought the opinion of the I.M.A. particularly in regard to professional education and medical relief. Dr. R. A. Amesur, the then President was nominated by the Central Government as the representative of the I.M.A. on the "Bhore Committee."

In May, 1946, the report of the Bhore Committee was published. The Bhore Committee's report consists of four volumes, covering about 1,200 pages. The Central Council, at its meeting held in Delhi, on 20-10-46 prepared a memorandum on the Bhore Committee report. The I.M.A. generally endorsed the Bhore Committee report and suggested some improvements. The following were some of the important suggestions: (1) Free medical aid should not be given to all, but only to the poor, under the existing circumstances; (2) Provision of whole-time medical officers on adequate remuneration without the right of private practice for rural and other sparsely populated areas where doctors have to do both preventive and curative work; (3) The long term planning should be given effect to as far as practicable as the short term attenuated plan is not likely to evoke sympathy and response; (4) The minimum standard of living should be provided for by suitable legislative enactments; (5) There should not be inequitous differences in salary between the administrative and other medical officers.

Terms and Conditions of Employment of Medical Men—The Association recommended as early as 1946-47, that adequate scales of remunera-

tion should be offered to the medical men working in the Railways, Coal Mines, Tea Gardens, under the State Government in the various categories as whole-time or part-time officers or as honorary medical specialists attached to teaching and other hospitals. The Association also suggested certain scales in this connection.

Research Scholarships—Four research scholarships of the value of Rs. 250/- per month were awarded to four young and energetic medical men of India for a period of 1 to 2 years in 1948 and the fund was restarted in 1954-55.

Authentication of International Certificates—At the request of the Association, the Director-General of Health Services (Government of India) agreed in the year 1954-55, to include the office-bearers of the Local Branches concerned of the Association in the list of authorities to whom approved stamps were to be distributed for issuing International Certificates of Vaccination against Cholera and Small-Pox.

During the year 1950-51, negotiations were carried on by the Association with the authorities of military and civil medical departments of the Government of India regarding the question of acceptance by the Government officers of bonafide medical certificates given by the registered medical practitioners.

Quack Practice—During the year 1954-55, the Association discussed once again the question of practice by unqualified persons and quacks and urged on the Union and State Governments to stop the practice of medicine by such persons by suitable legislation and making practice by quacks a cognisable offence.

The Association also requested the Government that it might be made a penal and cognisable offence for anybody who was not a qualified practitioner of modern scientific medicine or who did not possess a Doctorate degree to use the title "Dr.".

Doctors' Benevolent Fund—Due to outbreak of communal disturbances of a serious nature, a large number of medical practitioners left Pakistan from 1947. As many of these doctors had to leave behind all their belongings, the I.M.A. raised a Benevolent Fund particularly for giving relief to the refugee medical practitioners from Pakistan and an Information Bureau was also opened at the Central Office for the rehabilitation of such doctors.

Indigenous Systems of Medicine—The Indigenous Systems of Medicine Committee appointed by the Government of India with Sir R. N. Chopra as its President, sought the opinion of the I.M.A. The Association opined that India should evolve one unified system of scientific medicine, enriched by inclusion of all that is best in Ayurvedic, Unani and the modern systems of medicine. The practising Vaids and Hakims should also be brought under control of the State.

Opinion on similar lines was expressed regarding Homoeopathy also.

Government Ban on Medical Men—In 1944, the Government of Madras put a ban on medical officers under their employ, on political grounds, against becoming members of the I.M.A. After the President of the I.M.A. met the Adviser to H. E. the Governor of Madras, the misunderstanding was cleared and the ban was removed in due course.

During the year 1953-54, the Government of Madhya Pradesh imposed a ban on the Government Medical Officers in M.P. State against joining the I.M.A. The Association started negotiations with the Government to lift such a ban imposed by a State Government in free India.

Lucknow University Amendment Bill—In 1945, the Lucknow University Amendment Bill (1945) was taken up by the Central Council. At the suggestion of the I.M.A. the Government of U.P. ultimately decided not to proceed with the reactionery Bill. The said bill was also opposed by the Lucknow University Court and the University Executive Council.

Draft Bill on Radiology—During the year 1953-54, the Association discussed the provisions of the proposed draft bill on Radiology which curtailed the rights and privileges of registered medical practitioners to practise as radiologists. As the Association strongly protested against this move sponsored by certain radiologists, the Government of India were ultimately convinced and decided to drop the consideration of the bill in its present form.

Amalgammation of A.I.M.L.A. with I.M.A.—At the annual conferences of the I.M.A. and the A.I.M.L.A. held in December, 1947, at Bombay, resolutions were passed to amalgammate these two bodies.

Export of Rauwolfia Serpentina—During the year 1954-55, the Association urged on the Government to take steps to encourage the cultivation of this essential plant and to control its export.

Silver Jubilee of All-India Medical Conference—The 25th or the Silver Jubilee Session of the All-India Medical Conference was held with grandeur and success at Calcutta in December, 1948. Over 3,000 doctors from West Bengal and about 1,000

doctors from outside West Bengal attended this Conference which was inaugurated by Her Excellency, Sm. Sarojini Naidu, the then Governor of U.P., the nightingale of India and the able wife of Major M. G. Naidu, one of the past Presidents of the I.M.A. The closing session held on 28th December, 1948 was addressed by Rajkumari Amrit Kaur, Hon'ble Minister of Health of the Government of India.

First 5-Year Plan.—Dr. S. C. Sen, while he was elected President for the second consecutive term in 1954-55, drew the attention of the Government to fully give effect to the medical and public health provisions of this plan, even though the plan was not considered adequate by the Association. He regretted that although the necessary finance was available, hardly 40 per cent of the programmes had been carried out in most of the States on the plea of shortage of trained personnel. He also pointed out that there was a shortage of trained personnel in some of the States but there was a surplus in others. If Burma and Malaya had no objection to recruitment of technical personnel from India, it was not clear why the various States in India should not cast off "parochial and provincial prejudices."

Second 5-Year Plan.—During the year 1955-56, the Association discussed the second 5-year plan of the Government as regards its medical aspects and formulated various modifications for implementation, in the best interests of the people and the members of the medical profession.

B. C. G. Vaccination.—During the year 1955-56, the Association discussed the controversies regarding B.C.G. vaccination and opined as follows:

"In view of the fact that experiments, both human and animal, carried out during the last 35 years in different parts of the world have proved the harmlessness of B.C.G. Vaccine and its power of producing partial immunity lasting for 3-5 years in uninfected individuals properly inoculated with the vaccine prepared under scientifically controlled conditions, resulting in the abatement of tuberculosis, it is hereby resolved that the Indian Medical Association supports the Indian Government's B.C.G. Vaccination scheme as applied to susceptible groups of population but emphasizes that the vaccine should not be administered except under satisfactory conditions of production, distribution and administration by the Government, including the choice of individuals for inoculation."

World Medical Association.—The first Annual Assembly of the World Medical Association tentatively formed in London in 1946 was held at Paris, from September 17 to September 20, 1947. The Indian Medical Association joined the W.M.A. as one of its constituent members and sent two representatives to this first Annual Assembly. It was gratifying to note that one of the representatives from India (Dr. S. C. Sen), obtained a seat in the Council of the World Medical Association along with the representatives of 9 other countries (by securing the third highest vote), and that many of the amendments proposed by the Indian delegation were accepted by the Assembly. The I.M.A. was represented at all the Annual Assemblies of the W.M.A., held so far. Dr. Sen has still been continuing as a member of the Council and as the Secretary-in-charge of Asian zone.

Commonwealth Medical Conference.—The I.M.A. representative attended the Inaugural Session of the British Commonwealth Medical Conference held in September, 1948 in London at the invitation of the B.M.A. and the two Commonwealth Conferences held subsequently at Saskatoon in Canada in June 1949 and at Brisbane in Australia in May, 1950.

In view of the policy of racial discrimination of the South African Government, the Association decided not to send any representative to the next Commonwealth Medical Conference in 1951 if it was held in South Africa. Ultimately, however, this Conference was not held in South Africa for various reasons.

It was gratifying to note that the authorities of the Commonwealth Medical Conference accepted the invitation of the Indian Medical Association to hold its third Conference at Calcutta in India from the 20th to the 23rd March, 1952.

At the invitation of the Indian Medical Association, the 3rd Commonwealth Medical Conference was held in Calcutta on 20th 21st and 22nd March, 1952, at the auditorium of the All India Institute of Hygiene and Public Health. Dr. B. C. Roy, Chief Minister, Government of West Bengal and one of the ex-Presidents of the Indian Medical Association presided over the Conference. Delegates from (1) India, (2) Australia, (3) Eire, (4) South Africa, (5) Canada, (6) United Kingdom and (7) Southern Rhodesia attended the Conference. The following papers were read and discussed at the conference:—(1) Health Insurance in India by Dr. C. L. Katial, (2) Tuberculosis in India by Dr. P. V. Benjamin, (3) Reciprocity between India and other Commonwealth countries by Dr. K. C. K. E. Raja, (4) Medical Education in India by Dr. P. C. Rakshit, (5) History and Growth of the Indian Medical Association by Dr. P. K. Guha, (6) Some Reflections on the Health Problems of

the Indian Union by Dr. B. C. Das Gupta, and (7) Medical Journalism in India by Dr. A. D. Mukharji.

The foreign delegates wondered how the Indian Medical Association managed its affairs with the help of honorary office-bearers. They were also surprised to note that Journal of the I.M.A. was also managed and supervised by an honorary Editor and honorary office-bearers. They opined that the Association should advance much more money to keep up the standard of the health journal *Your Health* published by the Journal of the I.M.A.

Hitherto, Dr. S. C. Sen represented the Association at most of these Commonwealth Medical Conferences while he went abroad as a member of the Council of the World Medical Association. Dr. A. P. Mittra of Delhi represented the I.M.A. at this 4th British Commonwealth Medical Conference held at Toronto in Canada in 1955.

Mutual Affiliation of B.M.A. with I.M.A.—During the year 1947-48, the British Medical Association requested the Indian Medical Association to consider the question of mutual affiliation of the I.M.A. with the B.M.A. on equal terms and conditions.

Arrangements being completed for the mutual affiliation of the I.M.A. with the B.M.A. and by mutual understanding the B.M.A. had decided to abolish all its branches in India except in Assam and transfer the assets of the branches of B.M.A. in India to the I.M.A. (respective State and Territorial Branches).

Foreign Scholarships.—As a result of negotiations for about a year, the Watumull Foundation kindly offered a "Fellowship" in various fields of medicine including nutrition, preventive medicine, obstetrics, gynaecology and tuberculosis, tenable in U.S.A. for two years and authorised the Indian Medical Association to select a suitable candidate.

As a result of the negotiations between Dr. S. C. Sen on behalf of the I.M.A. and the authorities of the medical institutions abroad, a few resident appointments for a few Indian medical graduates could be arranged by this Association. In most of these cases, the candidates selected by the I.M.A. had to incur their travel expenses only, for their intensive post-graduate training abroad.

Building for I.M.A. at New Delhi

The Association was pleased to note that the Government of India had finally allotted a plot of land measuring 0·5 acre in the Indraprastha Estate near Hardinge Bridge in New Delhi, to the Association, at a concession price. The building is to be a three-storied one, in conformity with other buildings in the vicinity. The Association proposes to have, apart from rooms necessary for the Central Office, a spacious library, one or more meeting rooms, a good sized auditorium, a decent lounge and a refectory. It is also proposed to have a few rooms for the use of members visiting Delhi for short stay either on Association work or otherwise.

Some members of the Association have already contributed to the "Building Fund of the I.M.A." and the rest of them would have to follow suit, as early as possible, so that the proposed building may be constructed at Delhi for locating the permanent headquarters of the Association.

A mere recording of these facts shows how much remains to be done in the immediate future if the prospects and position of Indian medical practitioners are to be improved. Largely these depend on the circumstances of the country as a whole, but in direct relation to the medical profession, the duty of the Association is to watch, preserve, protest and properly advise, whenever required. No fair commentator will fail to be impressed with what the Association has already achieved. Its membership is large, its influence is spreading, it has now branches all over India; its Journal has improved considerably and has a growing circulation. The annual meetings of the Association and the annual conferences held each year under the auspices of the Association bring to focus medical opinion in this country.

Besides the important and outstanding questions mentioned above, the Association has tackled quite a number of problems of interest to the medical profession. The following are a few of them:

1. Question regarding the counter-signature by Government officials on certificates granted by registered medical practitioners.
2. Necessity of providing a register for the qualified dentists.
3. Realisation of fees from the patients at the Government Hospitals and abuse by the rich of the facilities provided at public hospitals for the poor.
4. Management and administration of the Indian Research Fund Association providing research scholarships to the meritorious workers.
5. Establishment of Research in Pharmacology for the study of indigenous drugs, starting pharmacological institutes and courses of training in Pharmaceutical Chemistry.

6. Establishment of adequate number of schools and training facilities for nurses, midwives and other auxiliary personnel in the country.
7. Compulsory provision of tiffin and periodical medical inspection of school children.
8. Enactment of a comprehensive Food Act.
9. Asking for legislation to prohibit or regulate medical practice by foreigners whose country does not have reciprocity with India.
10. Prohibition of the practice by quacks and charlatans.

Conclusion

The Association is the protector and spokesman of the Indian medical profession working as a guardian of the medical men's interest and welfare in whatever type of activity and service they may be engaged, just like the British or the American Medical Association. In other words, it aims and, as its work up-to-date has justified, claims to be the representative of the Indian medical profession. All medical men in India should regard the Indian Medical Association as their friend, philosopher and guide and join it because such a collective sanction alone can endow the Association with authority to negotiate with powers that be and to forge necessary legislative measures for the benefit of the profession. To enable the Association to play such an effective role, a still further increase in the number of branches through the length and breadth of the country and in its membership, is highly essential and it is hoped that the members of the profession throughout the country would rise to the occasion by joining it in ever increasing number. The ultimate aim of the Association is to have on its roll every medical practitioner of India possessing a registrable qualification in modern scientific medicine.

Acknowledgment

The author gratefully acknowledges the assistance he received in compiling this paper from the "Origin and Growth of the I.M.A." published at Bombay in 1941 by Dr. Chamanlal Mehta; from the "Souvenir of the XXV All-India Medical Conference" published at Calcutta in 1948 by Dr. A. K. Sen, Chairman and Dr. N. Sen, Secretary of the "Brochure Sub-Committee" of the Conference; and from the "Bengal Medical Directory" edited by Dr. P. K. Guha and published at Calcutta in 1951 under the auspices of the Bengal Provincial Branch of the I.M.A.

Appendix I

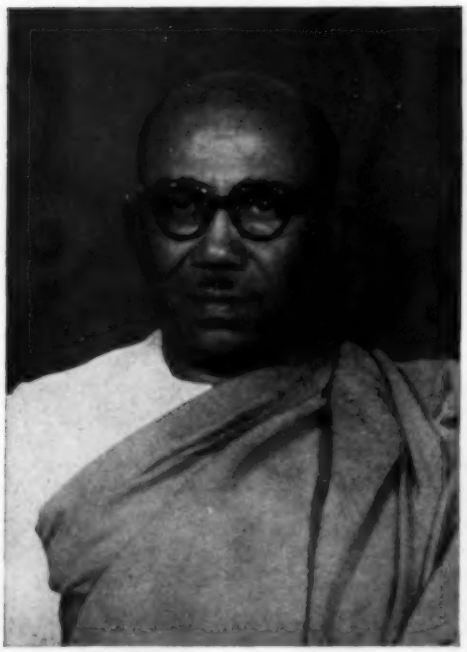
List of Presidents and Jt. Hony. Secretaries/Hony. General Secretaries of the Indian Medical Association

	Association year	President	Jt. Hony. Secretaries
1.	1928-29	Dr. G. V. Deshmukh (Bombay)	Dr. D. D. Sathaye (Bombay) ,, A. N. Ghosh (Calcutta) ,, K. S. Ray (Calcutta)
2.	1929-30	Dr. B. C. Roy (Calcutta)	Dr. D. D. Sathaye (Bombay) ,, A. N. Ghosh (Calcutta) ,, K. S. Ray (Calcutta)
3.	1930-31	Dr. Jivraj N. Mehta (Bombay)	Dr. D. D. Sathaye (Bombay) ,, A. N. Ghosh (Calcutta) ,, K. S. Ray (Calcutta)
4.	1931-32	Sir Nilratan Sircar (Calcutta)	Dr. D. D. Sathaye (Bombay) ,, A. N. Ghosh (Calcutta) ,, K. S. Ray (Calcutta)
5.	1932-33	Major M. G. Naidu (Hyderabad)	Dr. D. D. Sathaye (Bombay) ,, K. S. Ray (Calcutta) ,, S. N. Kaul (Lahore)
6.	1933-34	Dr. M. A. Ansari (Delhi)	Dr. D. D. Sathaye (Bombay) ,, K. S. Ray (Calcutta) ,, S. N. Kaul (Lahore)
7.	1934-35	Col. Bhola Nauth (Lahore)	Dr. J. P. Modi (Ahmedabad) ,, Bhupal Singh (Meerut) ,, K. S. Ray (Calcutta)
8.	1935-36	Hon'ble Dr. U. Rama Rau (Madras)	Dr. J. P. Modi (Ahmedabad) ,, Bhupal Singh (Meerut) ,, K. S. Ray (Calcutta)

EDITORS, JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

NILRATAN SIRCAR
March 1940 — December 1940

K. S. RAY
January 1941 — Till death in October 1950



A. D. MUKHARJI
October 1950 — December 1953

P. K. GUHA
From January 1954

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PAST ASSISTANT EDITORS OF THE JOURNAL

J. N. DUTT
1932-33

J. C. BANERJEA
1932-34

G. MUKHERJI
1933-34

K. K. CHATTERJI
1934-37

C. C. BASU
1934-38

SUNIL C. BOSE
1937-38

S. N. BAGCHI
1938-39

P. N. RAY
1938-41

P. GANGULI
1939-41

S. C. CHATTERJEE
1941-43

B. P. NEOGY
1941-50

B. P. TRIBEDI
1943-46

K. C. SARBADHIKARI
1946-48

K. K. SENGUPTA
1948-49

P. K. GUHA
1949-53

A. N. ROY
1950-51

APPENDIX 1—*Contd.*

	Association year	President	Jt. Hony. Secretaries	Hony. General Secretary
9.	1936-37	Dr. B. N. Vyas (Lucknow)	Dr. K. S. Ray (Calcutta), „ Bhupal Singh (Meerut), „ R. A. Amesur (Karachi)	
10.	1937-38	Dr. B. C. Roy (Calcutta)		Dr. K. S. Ray (Calcutta)
11.	1938-39	Dr. George Da'Silva (Jubbulpore)		Dr. K. S. Ray (Calcutta)
12.	1939-40	Dr. Bhupal Singh (Meerut)		Dr. K. S. Ray (Calcutta)
13.	1940-41	Dr. K. S. Ray (Calcutta)		Capt. P. B. Mukerji (Calcutta)
14.	1941-42	Dr. K. S. Ray (Calcutta)		Capt. P. B. Mukerji (Calcutta)
15.	1942-43	Dr. R. A. Amesur (Karachi)		Capt. P. B. Mukerji (Calcutta)
16.	1943-44	Dr. S. N. Kaul (Lahore)		Capt. P. B. Mukerji (Calcutta)
17.	1944-45	Dr. Jivraj N. Mehta (Bombay)		Capt. P. B. Mukerji (Calcutta)
18.	1945-46	Dr. R. A. Amesur (Karachi)		Capt. P. B. Mukerji (Calcutta)
19.	1946-47	Capt. P. B. Mukerji (Calcutta)		Dr. P. K. Guha (Calcutta)
20.	1947-48	Lt. Col. Amir Chand (Punjab)		Dr. P. K. Guha (Calcutta)
21.	1948-49	Capt. S. K. Chaudhury (Banaras)		Lt.-Col. Amir Chand (Delhi)
22.	1949-50	Dr. Chamanlal M. Mehta (Bombay)		Dr. S. C. Sen (Delhi)
23.	1950-51	Dr. T. N. Banerji (Patna)		Dr. S. C. Sen (Delhi)
24.	1951-52	Dr. T. S. Tirumurti (Madras)		Dr. S. C. Sen (Delhi)
25.	1952-53	Dr. B. V. Mulay (Sholapur)		Dr. S. C. Sen (Delhi)
26.	1953-54	Dr. S. C. Sen (Delhi)		Dr. A. P. Mittra (Delhi)
27.	1954-55	Dr. S. C. Sen (Delhi)		Dr. A. P. Mittra (Delhi)
28.	1955-56	Dr. A. C. Ukil (Calcutta)		Dr. A. P. Mittra (Delhi)

APPENDIX 2

LIST OF HONY. EDITORS OF THE JOURNAL OF THE I.M.A.

1928-29—1940-41 ...	Sir Nilratan Sircar, Kt. (Calcutta)
1941-42—1949-50 ...	Dr. K. S. Ray (Calcutta)
1950-51—1952-53 ...	Dr. A. D. Mukharji (Calcutta)
From 1953-54 ...	Dr. P. K. Guha (Calcutta).

APPENDIX 3

LIST OF PRESIDENTS OF THE ALL-INDIA MEDICAL CONFERENCES FROM 1917 TO 1956

Session	Venue	Year	Name of President
1	Calcutta ...	1917	Lt. Col. Raghabendra Rao
2	Delhi ...	1918	Sir Nilratan Sircar
3	Amritsar ...	1919	Dr. M. N. Odhedar
4	Nagpur ...	1920	Dr. Maharaj Kissen Kapur

CONFERENCES HELD UNDER THE AUSPICES OF THE I.M.A.

5	Calcutta ...	1928	Dr. G. V. Deshmukh
6	Lahore ...	1929	Dr. B. C. Roy
7	Poona ...	1931	Dr. Jivraj N. Mehta
8	Calcutta ...	1931	Sir Nilratan Sircar
9	Lucknow ...	1932	Major M. G. Naidu
10	Bombay ...	1933	Dr. M. A. Ansari
11	Delhi ...	1934	Col. Bhola Nauth
12	Nagpur ...	1935	Dr. U. Rama Rau
13	Karachi ...	1936	Dr. B. N. Vyas
14	Madras ...	1937	Dr. B. C. Roy
15	Meerut ...	1938	Dr. George Da'Silva
16	Lahore ...	1939	Dr. Bhupal Singh
17	Vizagapatam	1940	Dr. K. S. Ray
18	Hyderabad (Dn.) ...	1941	Dr. K. S. Ray
19	Patna ...	1943 (April)	Dr. R. A. Amesur
20	Ahmedabad	1943	Dr. S. N. Kaul
21	Cawnpore ...	1944	Dr. Jivraj N. Mehta
22	Amritsar ...	1945	Dr. R. A. Amesur
23	Madura ...	1946	Capt. P. B. Mukerji
24	Bombay ...	1947	Lt. Col. Amirchand
25	Calcutta ...	1948	Capt. S. K. Chaudhury
26	Allahabad ...	1949	Dr. Chamanlal M. Mehta
27	Sholapur ...	1950	Dr. T. N. Banerjee
28	Ahmedabad	1952 (Feb.)	Dr. T. S. Tirumurti
29	Patna ...	1952	Dr. B. V. Mulay
30	Hyderabad	1953	Dr. S. C. Sen
31	Lucknow ...	1954	Dr. S. C. Sen
32	Jaipur ...	1955	Dr. A. C. Ukil.
33	Trivandrum	1956	Dr. C. S. Thakar

APPENDIX 4

MEMBERSHIP STRENGTH OF STATE/TERRITORIAL BRANCHES OF THE I.M.A. AS ON 30-9-1956

Serial No.		Membership strength
	STATE BRANCH	
1	Andhra State Branch	800
2	Assam State Branch	585
3	Bengal State Branch	3,971
4	Bihar State Branch	1,784
5	Delhi State Branch	573
6	Hyderabad (Deccan) State Branch ...	592
7	Madhya Bharat State Branch ...	397
8	Mysore State Branch	788
9	Madhya Pradesh State Branch ...	546
10	Madras State Branch	1,761
11	Orissa State Branch	223
12	Punjab State Branch	704
13	Rajputana State Branch ...	570
14	Travancore-Cochin State Branch ...	600
15	Uttar Pradesh State Branch	1,618
	TERRITORIAL BRANCH	
16	Bombay Territorial Branch ...	806
17	Gujarat & Saurashtra Territorial Branch	1,325
18	Maharastra & Karnatak Territorial Branch	1,167
19	Kutch Territorial Branch	43
	DIRECT BRANCH	
1	Birat Nagar Branch	11
2	Sirmur Branch	10
	DIRECT MEMBERS	
1	Attached Membership (Central) ...	62
2	Direct Membership (Central) ...	5
	Total	18,941

The Founder-Secretaries of the Indian Medical Association

DR. K. S. RAY

DR. A. N. GHOSH

DR. D. D. SATHAYE

Dr. K. S. Ray and Dr. A. N. Ghosh of Calcutta and Dr. D. D. Sathaye of Bombay jointly nurtured the Association as its Founder-Secretaries in its infancy (1928-32). Dr. K. S. Ray continued as Jt. Hony. Secretary till 1937 and as Hon. General Secretary till 1940 following which he had the distinction of being elected President of the Association (1940-41 and 1941-42). He was the Editor, Journal of the I.M.A. from 1941-42 till his death in October 1950. Dr. A. N. Ghosh as Secretary-in-charge shouldered the responsibility of publishing the Association Journal from since its inception in 1930 up to 1934. His devotion to the cause of the I.M.A. later won him the positions of the President of the Bengal Provincial Branch and Vice-President of the all-India organisation. Dr. D. D. Sathaye served the Association as one of the Jt. Secretaries uninterruptedly till 1934. Even after his eightieth year Dr. Sathaye is conducting the Mahatma Gandhi Free Eye Hospital, Poona, as an ophthalmic surgeon.

HISTORY OF THE JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

S. K. SEN, M.B.

Journal of the Indian Medical Association

The I.M.A.

It was for the first time in the history of the qualified medical practitioners in India that all classes of the fraternity resolved to unite under the banner of one organisation, the All-India Medical Association. This momentous decision was taken at the V Session of the All-India Medical Conference held in Calcutta in 1928 (December) and presided over by Dr. G. V. Deshmukh of Bombay. This name of the organisation was, however, short-lived for at the very next (VI) session of the All-India Medical Conference held at Lahore in December 1929 under the presidency of Dr. B. C. Roy of Calcutta it was resolved to change the name of the All-India Medical Association to the Indian Medical Association.

The Association Journal

The need for an official organ was keenly felt at the time of the inauguration of the All-India Medical Association during the session of the V All-India Medical Conference (29th of December 1928). A monthly journal called the *Indian Medical World* was started from Calcutta, publication commencing in March 1930 under the Editorship of Sir Nilratan Sircar and an All-India Editorial board of 21 members with Dr. A. N. Ghosh as the Secretary in charge.

The *Indian Medical World* bore after it the descriptive sub-title of "The Journal of the Indian Medical Association" in all the issues published. The aims and objects of the Journal appeared in the Editorial of the first issue (March 1930) and are quoted below.

Aims and Objects

This journal represents the voice of the Indian Medical Association. It will always endeavour to keep before the medical profession its onerous duties and heavy responsibilities in the matter of Education, Sanitation, Research and Medical relief; it will chronicle the Association's activities and efforts for bringing about a greater harmony and closer co-operation among the members of the medical profession in India, for protecting their interests and also for setting on foot a strong movement for the improvement of the National health and National welfare.

A facsimile of column 1 of the page containing the above is given in Fig. 1.

Altogether 18 monthly issues of the *Indian Medical World* in 2 volumes of 12 and 6 issues each were published. The last number of the *Indian Medical World* was dated August, 1931.

The then President of the Indian Medical Association Dr. B. C. Roy, in a message to the *Indian Medical World* (Vol. II, No. 1, March 1931) speaking on problems confronting the medical profession and the country said: "The medium through which the Indian Medical Association speaks—the *Indian Medical World*—though new in the field of journalism should discuss these matters in its columns and in consultation with medical men give expression to the considered views of the profession with regard to them. If it can do so, the *Indian Medical World* will deserve the best wishes and thanks of all Indians, whether they belong to the profession or are outside it."

Evolution of Present Name and Early Management

The change in the name of the Journal to the *Journal of the Indian Medical Association* was from the September 1931 issue pursuant to a resolution adopted at the VII Session of All-India Medical Conference at Poona, Dr. Jivraj N. Mehta presiding. The alteration in name did not connote any change in the management or policy. It was, however, resolved to have a small Editorial Board of 5 members besides the President, Indian Medical Association with the Business Manager as its Secretary. It was further resolved that the Editorial Board should control the policy of the Journal, the Editor being given as free a hand as possible; that in the case of any change of policy or on matters of urgent public interest the President, Indian Medical Association, who was also the President of the Editorial Board should be consulted. For smooth running it was thought expedient at this stage to sanction the post of a Sub-Editor on terms decided upon by the Central Council of the I.M.A. It was also agreed that corresponding members not exceeding 10 in number

The Indian Medical World

The Journal of the Indian Medical Association

Vol I MARCH 1930 No. 1

Editorial Comments.

This journal represents the voice of the Indian Medical Association. It will always endeavour to keep before the medical profession its onerous duties and heavy responsibilities in the matter of Education. Sanitation, Research and Medical relief; it will chronicle the Association's activities and efforts for bringing about a greater harmony and closer co-operation among the members of the medical profession in India, for protecting their interests and also for setting on foot a strong movement for the improvement of the National health and National welfare.

These are the objects of this journal. How much it will accomplish will depend on the support it receives from the profession. The field before us is a vast one. The solution of our problems will require an united determination to solve them. A nation's struggle for health and happiness can only be won by unity, co-operation and the will to succeed. But we hope that this spirit will not be lacking amongst the members of the profession in India, for it is the doctors who must teach the public what it really needs for its welfare. We count therefore on every medical man and woman who has the interests of India and of the profession at heart to support us, to help us to build up and extend a constructive programme of work, and to use this journal as a medium for mutual exchange of ideas and opinions. Co-operation is the key-note to success.

* * * *

The medical profession in India owes a debt of gratitude to Mr. M. R. Jayakar for tabling a resolution, which has been passed by the Indian Legislative Assembly, to revive the competitive examinations in India for the Indian Medical Service, which have been in abeyance

FIG. 1—FACSIMILE OF THE FIRST COLUMN OF THE EDITORIAL PAGE OF THE FIRST ISSUE OF THE *Indian Medical World*.

in various important centres of the country might be appointed to the Editorial Board.

The Editorial Board and the management of the Journal were fully revised during 1932 and set upon a better working basis. This was named the Journal Committee which in the year 1932, when first formed, was as follows:

Editor—Sir Nilratan Sircar, Kt.; *Business Manager*—Dr. Aghore Nath Ghosh; *Members*—Drs. H. Ghosh, A. C. Ukil, J. N. Dutt, S. K. Sen, K. C. Chaudhuri, J. C. Banerjea, N. N. Basu, K. S. Ray (Jt. Secretary, I.M.A., *ex-officio*).

The Report of the Central Council of the Indian Medical Association for the year 1932 gives the first indication of Assistant Editors and others being appointed from amongst members of the Journal Committee with a view to division of labour and facility of work. Accordingly Drs. J. C. Banerjea and J. N. Dutt were elected Assistant Editors, Dr. A. N. Ghose, Business Manager, and Dr. S. K. Sen, Assistant Business Manager.

At a meeting of the Central Council held on 2-12-1934 it was resolved that no member of the Journal Committee shall receive any honorarium.

The Rules of the I.M.A. relevant to the objects of the I.M.A. and the Association Journal printed in February 1938 issue of the Journal as an Appendix are as follows:

Publish and circulate a journal which shall be the official organ of the Association of a character specially adapted to the needs of the medical profession in India and which shall undertake publicity and propaganda work of the Association through its columns.

Journal of the I.M.A. shall be under the charge of an Editor who shall be assisted by a Journal Committee.

The Journal Committee—A. Composition (a) *Ex-officio* members—(i) The Editor, (ii) The Hony. General Secretary of the Association. (b) Elected members—(i) 2 Asst. Editors, (ii) The Business Manager, (iii) 5 other members. The elected members of the Journal Committee shall be elected every year by the Central Council.

B. Functions and powers of the Journal Committee.

(a) Shall be responsible for the regular publication of the Journal once a month.

(b) Shall meet once a month ordinarily.

(c) Shall scrutinise all the articles to be published in the Journal and pass them for publication.

(d) Shall be responsible for the management of the whole business of the Journal, its printing, the securing of advertisements, distribution of the Journal among the members, etc.

(e) Shall have power to form a Board of Collaborators.

(*f*) Shall reserve about 5 pages in each issue of the Journal for propaganda, organisation and publicity and other special news of the Association to be at the disposal of the Hony. General Secretary of the Association. In the absence of such matter this space can be utilised by the Journal Committee for other purposes.

(*g*) Shall prepare a budget and put it for consideration and sanction at the first meeting of the Central Council.

(*h*) Shall prepare a monthly and a quarterly statement of accounts of the Journal to be put before the Central Council through the Hony. General Secretary.

(*i*) Shall prepare a yearly statement of accounts and get it audited by the Auditor of the Association and put it before the Annual General Meeting of the Association.

(*j*) Shall have power to spend money for various things concerned with the Journal up to the amount sanctioned in the budget estimate for the year by the Central Council. Beyond this limit it shall have to obtain special sanction of the Central Council beforehand.

According to the revised Rules of the Indian Medical Association (1940-41) the Editor of the Journal is the chairman of the Journal Committee and is in charge of the Journal and with the help of the Journal Committee is responsible for the publication and management of the Journal. The Journal Committee is responsible for the management of the whole business of the Journal, its printing, the securing of advertisements, distribution of the Journal among the members etc. The Journal Committee have also power to spend money for various things connected with the Journal up to the amount sanctioned in the budget estimate for the year by the Central Council, and power to form a Board of Collaborators.

Later Management

In the revised rules that came into force on 26-12-46 there was hardly any change in the Rules defining the functions of the Journal Committee.

The Rules of the Association were last revised in December 1953 in Memorandum, Rules and Bye-laws and were made effective from April 1954.

The Journal of the Association comes within the purview of the Bye-laws of the Association which read as follows:

The Journal of the Association shall be under the charge of the Editor who shall be assisted by the Journal Committee.

Composition of the Journal Committee.

(*a*) The Editor,
(*b*) Two Assistant Editors,
(*c*) The Hony. Secretary,
(*d*) The Hony. General Secretary or his nominee who shall be a member of the Working Committee or the Central Council,
(*e*) Five other members.

The members of the Journal Committee shall be elected every year by the Central Council at its annual meeting.

Functions of the Journal Committee.

(*a*) The Journal Committee shall help the Editor in the regular publication of the Journal.

(*b*) Shall meet once a month, ordinarily.

(*c*) Shall scrutinise all the articles to be published in the Journal and edit, pass or refuse them for publication.

(*d*) Shall be responsible for the management of the business of the Journal, its printing, securing of advertisements, distribution of the Journal among the members, etc.

(*e*) Shall have power to select Referees and Collaborators.

(*f*) Shall reserve at least 4 pages in each ordinary issue of the Journal for propaganda, publicity, organisation matters and other special news of the Association to be at the disposal of the Hony. General Secretary or his nominee on the Journal Committee. In the absence of such matter this space can be utilised by the Journal Committee for other purposes.

(*g*) Shall prepare a budget and submit it through the Hony. General Secretary for consideration and sanction at the Annual meeting of the Central Council.

(*h*) Shall prepare a quarterly statement of accounts of the Journal to be placed before the Working Committee through the Hony. General Secretary.

(*i*) Shall prepare a yearly statement of accounts and get it audited by an auditor appointed by the Association and submit it through the Hony. General Secretary before the Annual Meeting of the Central Council.

(*j*) Shall have power to spend money for various purposes connected with the Journal up to the amount sanctioned in the budget estimates for the year by the Central Council. Beyond this limit, it shall have to obtain special sanction of the Working Committee beforehand.

The Editor, the two Assistant Editors and the Hony. Secretary of the Journal are office-bearers of the Association.

Location of Office

The Journal since its inception is being published from Calcutta.

The office of the Journal was at first located at 6A, Corporation Street (now Surendranath Banerjee Road) from some time before the publication was

taken in hand. From August 1, 1931, the office of the Bengal Branch of the Indian Medical Association, the head office of the Indian Medical Association and the office of the *Indian Medical World* were located at 67, Dharamtala Street, the rent and taxes being equally shared. Gradual development and expansion in all these offices resulted in lack of accommodation at this address and when the space in the premises proved absolutely inadequate to run the Central Office and the Journal Office, these two were removed in April 1938 to a more commodious place, 12, Samavaya Mansions on Hogg Street.

These premises had to be given up by arrangement with the landlords and the Central and Journal Offices removed in December 1943 to Suite No. 23, Samavaya Mansions on Corporation Place. The Central Office was shifted to Delhi in January 1949 and since then the Journal Department has been occupying the entire suite. What appeared quite spacious at this juncture gradually became insufficient and for some years now the Journal Office is crammed to the extreme with no facility for proper working of the staff and management of affairs in its day-to-day activity. The authorities, however, propose to shift the office to more commodious apartments.

Growth and Development of J.I.M.A.

The Journal of the I.M.A. recorded a steady all-round progress from year to year. The circulation increased with the increase in the number of I.M.A. members (who, incidentally, get a copy free), besides increase in subscribers, exchange copies etc. Some statistical data showing the growth of the Journal have been presented here graphically. The first graph (Fig. 2) shows the number of copies printed year by year. A second (Fig. 3) depicts the number of pages of reading matter printed each year (October to September). The third (Fig. 4) represents the number of contributions received for publication during the ten-year period 1945-46 to 1954-55 and the number published. The last gives a glimpse not only into the quantity of materials received but is also indicative of the quality of the material published.

The idea of conversion of the Journal into a fortnightly was conceived as far back as 1945 and the I.M.A. Working Committee at a meeting in December 1945 discussed a report from the Editor (Dr. K. S. Ray) along with a memorandum submitted by Dr. B. P. Neogy, Assistant Editor. The conversion of the Journal into a fortnightly, permanent location of the Journal Office and the Journal having its own printing press were envisaged in the report. It however took some years

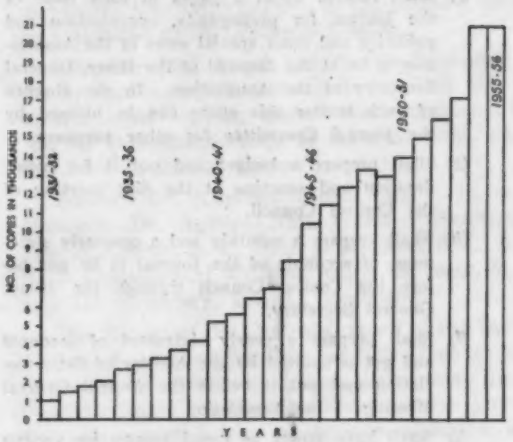

Fig. 2—Showing the Number of Copies (in thousands) Printed in Different Years from 1931-32—1955-56.

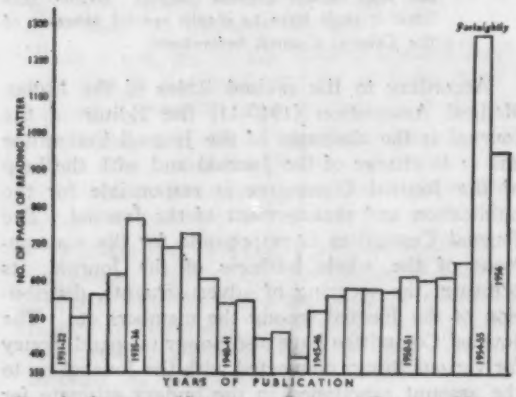

Fig. 3—Showing Number of Pages of Reading Matter Printed in the Volumes from 1931-32 to 1954-55 and 1956. The Year 1954-55 Shows the Total of Pages in 2 Volumes Covering 15 Months, October 1, 1954 to December 16, 1955. 1956 Refers to the Calendar Year.

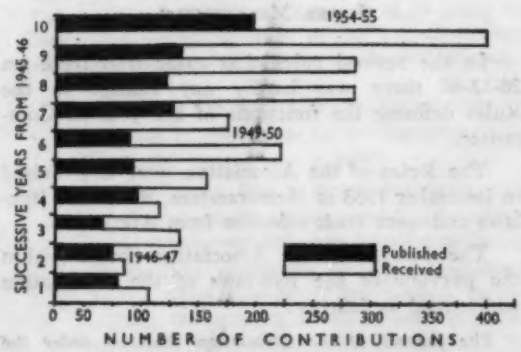

Fig. 4—Showing the Number of Contributions Received for Publication and the Number Published during the Ten-Year Period 1945-46 to 1954-55.

in executing the idea of a fortnightly into practice. The publication of the Journal twice a month (1st and 16th) started under the editorship of Dr. P. K. Guha with the October 1, 1954 issue. The editorial published in this issue is informative :

Progress is inherent in life. Our Journal has steadily progressed during the last quarter of a century and has reached a stage when we feel, further expansion is necessary to make it more useful to the readers.

With this end in view, we have arranged to publish the Journal on the 1st and the 16th i.e. twice a month. Our ultimate object is to convert this Journal into a weekly publication. We would have been happier to make it a weekly journal immediately but caution forewarns us not to take a hasty step. So we prefer to proceed by stages. We know step-by-step progress is not dramatic but is nevertheless sure and steady.

This we think is an appropriate occasion when we should re-examine the purpose of the Journal and either re-affirm the old aims or fix new ones. The major aim of this Journal as is well known, is to make available in its pages clinical material which would particularly benefit the general practitioners.

Ours is not an exclusive journal of research. It is a general or all-purpose journal belonging to the Association where most of the readers are general practitioners. One of the important functions of our Journal should therefore, be, to present to a variety of readers, a varied content with particular stress on practical papers. With this object in view, we have introduced from this issue a new section,—The Refresher Course, in addition to the existing ones. Though primarily it is a general medical journal, we are always keen to include in it scientific original articles in which are presented the results of research and investigations carried out in this country. In any medical journal, papers of scientific investigations should find a prominent place, because otherwise it would defeat the purpose of the journal to educate the general practitioners in the uptodate knowledge of prevention of diseases and restoration of health, also to stimulate thought and talent amongst them.

It is indeed a happy sign that contributors to this Journal are ever increasing and we are receiving excellent articles of real value from different parts of the country. This Journal has built up a reputation which we believe will stand it in good stead in the future. We hope, the time is not far away when in line with the official organs of prominent medical associations of the world, we shall be able to convert this Journal into a weekly publication.

Editorial and Secretarial Staff of the Journal with Allowances

To begin with, the day-to-day work of the Journal as also matters relating to its publication were looked after by Dr. A. N. Ghosh, the Secretary in charge. He was given an honorarium of 15 per cent of the advertisement revenue of the Journal which was self-supporting from the very first issue (March 1930). There were a few members of the Association who out of personal allegiance to Dr. K. S. Ray and love for the Association itself volunteered to help the publication by submitting abstracts from contemporary publications, reviewing books and contributing articles and case notes. Naturally their activities were spasmodic. Most of the articles in the early issues were those read at the V session of the All-India Medical Conference held at Calcutta in 1928. Dr. S. K. Sen who had been working with the Secretary in charge casually at first, became a regular helper and by August 1931 his services were considered essential and formally requisitioned as Sub-Editor, his remuneration being fixed at 5 per cent of the advertisement revenue. Dr. A. N. Ghosh and Dr. S. K. Sen were both members of the Journal Committee which had already come into existence after the change-over from Editorial Board. In 1932-33 with work in the department on the increase, two members of the Journal Committee Dr. J. N. Dutt and Dr. J. C. Banerjea were made Assistant Editors. The finances requiring more consistent attention now, Dr. S. K. Sen was transferred to the business side as Assistant Business Manager under Dr. A. N. Ghosh, Business Manager.

In 1933-34, Dr. J. C. Banerjea and Dr. G. Mukherji became Assistant Editors and Dr. K. C. Chaudhuri, the Secretary, and they all drew small remunerations. It was at this time resolved by the Central Council at its XXIX meeting that "no member of the Journal Committee shall receive any honorarium." Pursuant to this decision, the then incumbents submitted their resignations and new members were elected to the vacancies. But the preoccupations of the newly elected members precluded them from giving such service as was being available and considered necessary for bringing out a journal and also looking after its administration. Dr. G. Mukherji was given a paid appointment of Assistant Secretary for the Journal but he left Calcutta soon after. Dr. S. K. Sen and Dr. P. C. Ghosh were then appointed subeditors on part-time basis in 1935-36 and both of them have since been working in the Editorial Department. Dr. G. Hazra joined their ranks and worked from 1936-37 to 1941-42. Dr. N. G.

Mojumder also worked as a part-time sub-editor from 1942-43 to 1951-52. It may be recalled that all these workers (Assistant Editors, Secretary-in-charge/Business Manager, Assistant Secretary, Sub-Editors) worked more for love for the work and the Association than for financial gain, the allowances received being very small indeed. The allowances to sub-editors were a paltry amount till 1946 when it showed some improvement but this at any rate was a post-war arrangement and did not mean much. The post of a non-medical sub-editor was filled up by Sj. J. Chakravarti in 1950-51 (September to July) but he resigned on getting a lecturership in a college.

The present staff of sub-editors consists of 3 medical Dr. S. K. Sen (whole-time), Dr. P. C. Ghosh (part-time), and Dr. L. K. Ganguli (part-time from 1954-55) and one whole-time non-medical Sri S. Mookerjie (from 1951-52). Sri S. P. Chaudhury who is also on the staff (from 1951-52) and primarily concerned with the editorial work of *Your Health* as a sub-editor also helps in the Journal work whenever needed. The present strength of sub-editors obtains from the introduction of the twice-a-month publication of the Journal as it involved a higher standard of editing and both pressure and volume of work had gone up. Further improvement will need more personnel.

Board of Collaborators, Sectional Secretaries and Sectional Referees

In 1935-36 the Journal Committee formed a Board of Collaborators consisting of eminent medical practitioners belonging to different provinces of India. In the same year the following Sectional Sub-Committees were formed with a view to improve the scientific side of the Journal:

Medicine, Surgery, Obstetrics and Gynaecology and Diseases of Children, Pathology and Bacteriology, Preventive Medicine, Hygiene and Public Health, Physiology, Nutrition and Biochemistry, Radiology and Electrotherapy, Otorhinolaryngology, Ophthalmology, Venereal Diseases.

In subsequent years the sections were further subdivided. The sections that existed in 1955-56 were Anaesthesiology, Anatomy, Dermatology, Dentistry, Jurisprudence and Toxicology, Leprosy, Medicine, Medicopolitics, Obstetrics and Gynaecology, Ophthalmology, Otorhinolaryngology, Pathology and Bacteriology, Pediatrics, Pharmacology, Physiology and Biochemistry, Psychiatry and Neurology, Public Health, Radiology, Social Medicine, Surgery, Tuberculosis, Venereology.

The conveners of the different sub-committees discussed the programme of work for the improvement of the Journal and settled the functions of the different sectional sub-committees. These were:

Contributing materials for publication in the Journal, particularly under the following heads:

(i) Original papers;
(ii) Abstracts and reviews of medical scientific literature from leading contemporaries;
(iii) Proceedings of local scientific bodies;
(iv) Proceedings of interesting clinical meetings of the I.M.A.;
(v) Scientific editorials.

Attempts were made to improve the quality as well as the printing of the materials published and with a view to make the Journal more popular with the majority of the members of the I.M.A., new sections were featured from time to time.

All-India Advisory Editorial Board

All-India Advisory Editorial Board first constituted in 1944-45 with Dr. Jivraj N. Mehta, Rao Bahadur Dr. T. S. Tirumurti, Dr. Bhupal Singh and Dr. P. Kutumbiah as members has been continued since, by annual elections by the Journal Committee.

Paper and Printing

Paper—Ivory finish paper (36 lb. Double Demy) was used in the initial years. With the gradual increase in the number of copies printed and with a view to keep uniformity in quality, paper was obtained direct from a local paper mill against forward contract for 6 months at a time. During the 2nd World War years and some years that followed the paper scarcity was acute causing serious dislocation of work and hampering regular publication. Paper of inferior quality had to be used perforce—the standard varying not only from issue to issue but also in the same issue. During the same period the size of the paper used had to be changed from the usual Double Demy to Imperial. The same remarks apply to art paper used for printing plates of microphotographs, x-ray pictures and the like and imitation art paper had to be used instead. The Paper Control (Economy) Order issued during 1943-44 continued till about the close of 1949-50 but the paper problem persisted.

To compensate the shortage of paper the Journal Committee had to make a drastic reduction in the number of pages of reading matter. Usual margins were encroached upon and the typography changed from 10 pt. leaded to 8 pt. leaded or 8 pt. solid depending on the category of reading matter. Many papers were edited and

abridged to an extent that was not thought of or necessary before. All these procedures were adopted so as to serve to the readers of the Journal the same quantity of materials as they used to get. Half-tone blocks were studded in plates as far as possible and legends thereof arranged in the text pages facing, to economise art paper or imitation art paper of whatever quality that could be procured. Many pictures previously printed on art paper had to be reproduced in coarser screen on the body. Cover paper had to be discarded altogether. Such struggle persisted for years during and after the war and even after the attainment of Independence.

The circulation increasing steadily and consistently throughout the career of the Journal with only a short setback after division of India, the problem of paper supply continued to be a headache to the authorities. The questions of reverting to better though not uniform quality of paper for the text and art paper for art plates, restoring the usual 10 pt. types for the smaller 8 pt. types and improvements in display and layout were taken up and changes effected gradually. The paper supply position however remained unsatisfactory. It eased ultimately when import of paper was envisaged and put into practice during the editorship of Dr. A. D. Mukharji in 1952-53. The journal was converted into a fortnightly in 1954-55 and the wisdom of the procedure was appreciated all the more as this has meant timely supply and uniform standard of paper. The display and layout were improved considerably and brought to a new and higher standard with the introduction of the fortnightly by the present Editor Dr. P. K. Guha.

The words of Dr. B. V. Mulay in his Presidential Address at the XXIX All-India Medical Conference (Patna, December 1952) may be quoted in this connection.

"The standard of the Journal of the I.M.A. is fast improving and the lay journal *Your Health* has drawn closer to the heart of the public, thanks to the loyalty and sacrifice which is ungrudgingly offered by the staff of the journals. The work of the headquarter and of the journals is carried on with the precision of a highly developed machine."

Printing—To begin with printing of the Journal was from hand-set types. The necessity of linotype composition was considered essential and from 1932-33 the Journal is being printed in linotype. The successive printing houses to which the Journal had been entrusted had in their own way and according to their resources given their co-operation and assistance. It was more on the question either of extended facilities or rates that the printing had to be switched from one printing press to another along with the progress of the Journal.

THE ASSOCIATION JOURNAL WAS BORN DURING THE PRESIDENTSHIP OF DR. B. C. ROY (RIGHT), WHILE THE LATE DR. AGHORE NATH GHOSH (CENTRE) WAS THE SECRETARY IN CHARGE. AT LEFT IS DR. A. D. MUKHARJI, DURING WHOSE EDITORSHIP OF JIMA WAS BORN *Your Health*.

CONCLUSION

The short historical survey that has been attempted in the above lines may appear incomplete in places. If readers find any error or discrepancies the author will be glad if these are brought to his notice.

In preparing this account the assistance of his colleagues, Dr. P. C. Ghosh and Mr. S. P. Chaudhury, has been invaluable and the writer wishes to express his gratitude to them.

APPENDICES

APPENDIX I—SOME TECHNICAL DETAILS OF THE JOURNAL

Size of the Journal—Double Demy Octavo.

Typography used—10 pt. on 11, 10 pt. solid, 8 pt. on 10 and 8 pt. solid, composed in 2 columns 19 ems wide each.

Features—Original articles, Special articles, Miscellaneous articles, Case Notes, Abstracts from Current Medical Literature, Editorial Comments, Medical Notes and News, Correspondence, Reviews, Obituary and Association Notes (issued as Supplement from 1940-41).

Besides, new features of professional interest such as (1) Medical Preparedness Series articles on War Medicine, A.R.P. and allied subjects, (2) Modern Therapy in General Practice, (3) Refresher Course Series of articles, (4) Practitioners' Series articles, (5) Articles on Public Health, Medical Education etc., were added from time to time.

APPENDIX 2—CHRONOLOGY OF IMPORTANT EVENTS

1930-1931 First issue of *Indian Medical World* published (March 1930). No. of copies printed 1000 (from hand-set types).

1931-1932 Last issue of *Indian Medical World* published (August 1931).
First issue of *Journal of the Indian Medical Association* published (September 1931).

1932-1933 No. of copies printed 1500.

1933-1934 No. of copies printed 1800.

1934-1935 Central Council decided that "no member of the Journal Committee shall receive any honorarium".
Instead of the usual twelve, thirteen issues (September 1934—September 1935) comprised this Volume (IV). The idea was to bring the Journal Audit period in step with that of the Central Council which begins in October.

1935-1936 The Journal Committee formed a Board of Collaborators consisting of eminent medical practitioners from all over India.
Sectional sub-committees formed and conveners appointed. Functions of different sectional sub-committees defined.
The Journal Committee created a fund with a fixed deposit of Rs. 5,000/- in the Bank.

1936-1937 Series of articles under the section Modern Therapy in General Practice published.

1937-1938 Journal Committee felt that the question of the Journal having a press of its own in future should be kept in view.

1938-1939 Special issues of Education Number (July 1939) besides the usual Conference issue, published.

1940-1941 No. of copies printed 5200.
Association Notes published as Supplement.

1941-1942 Sir Nilratan Sircar relinquished editorship and Dr. K. S. Ray assumed office in his place (January 1942).
No. of copies printed 5,500.

1942-1943 Series of articles on War Medicine, A.R.P. and allied subjects under the section Medical Preparedness Series. Scarcity of paper due to commandeering by Government of India of 90 per cent of India's production resulted in reduction of number of text pages and use of smaller types.
Articles published in the Journal began to be indexed regularly in the *Quarterly Cummulative Index Medicus*.
No. of copies printed 6,000.

1943-1944 Articles from service men. Difficulties of publishing a journal during War brought to the attention of readers in October 1943 issue (Editorial).
No. of copies printed 7,000. Paper Control (Economy) Order enforced.

1944-1945 Total pages printed reduced due to paper shortage.
Articles published in the Journal were first systematically abstracted in foreign journals.

1945-1946 Paper Control (Economy) Order still in force and number of pages limited.
No. of copies printed exceeded 10,000.
Journal Committee appointed an All-India Advisory Editorial Board and Sectional Secretaries.
Working Committee at a meeting dated 22-12-45 considered report of the Editor along with a memorandum submitted by Dr. B. P. Neogy, Asst. Editor, in which the conversion of the Journal into a fortnightly was envisaged for the first time.

1946-1947 Journal passed through an unprecedented situation arising out of the communal disturbances prevailing in Calcutta.
2 issues (August and September) printed simultaneously in 2 presses.
3 issues handled simultaneously by the Editorial Dept. to make up arrears.
A new section Current Topics introduced as a feature.

1947-1948 Labour trouble in printing presses and irregular supply of paper made maintenance of regularity in publication difficult.
Circulation increased to 12,000.

1948-1949 Decision to designate Hony. Business Manager as Hony. Secretary, Journal of the I.M.A.
Journal Committee enhanced advertisement rates by about 50 per cent from April 1948.
No. of copies printed 13,500.

1949-1950 Sectional Referees appointed by Journal Committee.
Detailed Report for publication of the Journal as fortnightly submitted to Working Committee.
Towards the close of the year Paper Control (Economy) Order withdrawn and 36 lb. D/Demy S.C. printing paper began to be used.
No. of copies printed 13,000 (a transitory setback as a repercussion of the partition of India).

1950-1951 October 1950—one special Extra Issue of 15 articles (64 pages) on Modern Treatment in General Practice.
Dr. K. S. Ray, Editor passes away on 24-10-50
Dr. A. D. Mukharji assumes office of Editor on 28-10-50.
New features Practitioners' Corner and Your Questions introduced.
Advertisement charges revised.
Firm in London appointed Overseas Representative to procure foreign advertisements.
No. of copies printed 14,000.

1951-1952 Advertisement position improved considerably.
No. of copies printed 15,000.
One special extra issue Conference Number published.
Publication of lay health journal *Your Health* started from the J.I.M.A. office (January 1952).

PAST BUSINESS MANAGERS / SECRETARIES OF THE JOURNAL

A. N. GHOSH 1930 to 1932-33 | K. C. CHAUDHURI 1933-34 | A. K. SEN 1934-35 to 1939-40 | A. K. CHAKRABORTY 1940-41 to 1946-47 | P. K. CHATTERJEE 1949-50 | J. MOJUMDAR 1950-51

PRESENT OFFICE STAFF

L-R Standing—T. CHAKRAVARTY, C. CHAKRAVARTY, BISWANATH PRASAD and MAYADHAR KHUNTIA.
Sitting—K. SARKAR, G. BHADURI, K. GHOSH, D. CHOWDHURI, P. BISWAS, T. BASU, C. ROYCHOUDHURI.

L-R— M. ADHIKARI, R. BANERJEE, M. BANERJEE, PARES PAL, NAGEN KHUNTIA, TEK BAHADUR, GOURANGA BEHERA and BISHNU GHOSH.

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ALL-INDIA ADVISORY EDITORIAL BOARD 1955-56

C. O. KARUNAKARAN

U. KRISHNA RAU

D. V. VENKAPPA

H. N. SHIVAPURI

Other members are S. N. KAUL, C. M. MEHTA, T. N. BANERJEE, B. V. MULAY, S. C. SEN and A. C. UKIL and their photographs appear on pp. 14, 17 and 18.

JOURNAL COMMITTEE 1955-56

P. K. GUHA
Editor
From 1953-54

C. L. MUKHERJEE
Assistant Editor
From 1950-51

H. S. CHAKRAVARTI
Assistant Editor
From 1953-54

R. SINHA
Secretary, 1947-49
and from 1951-52

S. SEN
Joint Secretary, I.M.A.
Ex officio

A. D. MUKHARJI
From 1949-50

A. K. BOSE

A. DAS
From 1951-52

P. B. MUKERJI

S. C. SEAL
From 1951-52

PRESENT EDITORIAL STAFF

S. K. SEN

P. C. GHOSH

L. K. GANGULI

S. MOOKERJIE

S. P. CHAUDHURY

1952-1953 Rs. 16,622-6-0 transferred from the Journal Fund to the Reserve Fund of the I.M.A.
Editor Dr. A. D. Mukharji attended the III World Medical Editors' Conference at Athens and toured Europe visiting offices of the national medical journals of Greece, Italy, W. Germany, Austria, Sweden, Norway, U. K., France and Switzerland.
No. of copies printed 16,000.

1953-1954 Preparatory year for conversion of the Journal into a twice-a-month publication.
Dr. P. K. Guha took over Editorship from Dr. A. D. Mukharji who relinquished the reins of the office of Editor after assuming responsibility as Minister of State in charge of Medical and Public Health Dept. of Government of West Bengal.

1954-1955 Journal to have 2 volumes a year. The first of such volumes (Vol. 24) ended with May 16, 1955 issue, the next starting with June 1, 1955 to end in December 16, 1955. Series of Refresher Course articles published, 2 in each issue.
Compilation of Vol. I of *Refresher Course for Practitioners* completed and placed in the market (August 1955) with articles published up to May 16, 1955.
Lack of accommodation in office causes hardship.
Your Health showed a steady march.
Special Committee appointed by the Working Committee goes into details of working of the Journal.
Excess of Income over expenditure transferred to Fund Rs. 25,442/14/6.
No. of copies printed exceeded 20,000.

N.B. Arrangements to issue the Journal in 2 volumes (Jan. 1 to June 16 and July 1 to Dec. 16) each year to be effective from January 1, 1956 number.

Appendix 3

A—Editors of the Journal

Sir Nilratan Sircar, KT., M.A., M.D., D.C.L. (March 1930 to December 1940).
Kumud Sankar Ray, M.A., B.SC., M.B., CH.B., F.S.M.F. (January 1941 till death on October 24, 1950).
A. D. Mukharji, L.M.F., F.S.M.F., (October 28, 1950 to December 1953).
P. K. Guha, M.B., M.R.C.S., D.O.M.S. (from January 1954).

Editors of Your Health

A. D. Mukharji, L.M.F., F.S.M.F. (January 1952 to December 1953).
P. K. Guha, M.B., M.R.C.S., D.O.M.S. (from January 1954).

B—Assistant Editors

Bagchi, S. N., M.SC., M.B., M.O. (1938-39).
Banerjea, J. C., M.B., M.R.C.P. (1932-33 & 1933-34).
Basu, Charu Chandra, B.A., M.B. (1934-35 to 1937-38).
Bose, Sunil C., M.B., M.R.C.P., D.T.M. (1937-38).
Chakravarti, H. S., M.D. (from 1953-54).
Chatterjee, Sisir Chandra, M.D., M.R.C.P., D.P.H. (1941-42 & 1942-43).
Chatterij,, K. K., F.R.C.S.I., LT.-COL. I.T.F. (1934-35 to 1936-37).
Dutt, J. N., B.SC., M.B. (1932-33).
Ganguly, P., L.M.S., D.T.M., CAPT. I.M.S. (RETD.) (1939-40 & 1940-41).
Guha, P. K., M.B., M.R.C.S., D.O.M.S. (1949-50 to 1952-53).
Mukherjee, C. L., M.B., M.O., M.R.C.O.G., PH.D. (from 1950-51).
Mukherji, G., M.B., M.D. (1933-34).
Neogy, B. P., M.B., M.R.C.S., M.R.C.P. (1941-42 to 1949-50).
Ray, P. N., B.A., F.R.C.S. (1938-39 to 1940-41).
Roy, A. N., B.A., L.M.F. (1950-51).
Sarbadhikari, K. C., M.B., F.R.C.S. (1946-47 & 1947-48).
Sen Gupta, K. K., M.A., B.SC., M.B., D.T.M. (1948-49).
Tribedi, B. P., M.B., D.B., F.N.I. (1943-44 to 1945-46).

C—Business Managers and/or Secretaries

Aghorenath Ghosh, M.B. (1930 to 1932-33).
K. C. Chaudhuri, M.B. (1933-34).
Anil Kumar Sen, M.B. (1934-35 to 1939-40).
Anil Kumar Chakraborty, M.B. (1940-41 to 1946-47).
S. K. Sen, M.B. (Acting) 1946-47.
Ranajit Sinha, B.SC., M.B., M.R.C.S., L.R.C.P., L.M., D.G.O., D.R.C.O.G. (1947-48, 1948-49 & from 1951-52).
P. K. Chatterjee, M.B., M.R.C.P., F.C.C.P. (1949-50).
J. Mojumdar (1950-51).

Appendix 4—Members of All-India Advisory Editorial Board

Amir Chand, F.R.C.P.E., LT.-COL. I.M.S. (RETD.) (1947-48 & 1948-49).
Banerjee, T. N., M.B., M.R.C.P. (from 1949-50).
Chaudhuri, S. K., B.A., M.B., CAPT. I.M.S. (RETD.) (1947-48 & 1948-49).
Cooper, R. N., M.S., F.R.C.S. (1947-48 & 1948-49).
Dadachanji, K. K., L.M. & S. (1947-48).
Karunakaran, C. O., M.B.B.S., D.I.H., D.P.H., D.BACT. (from 1955-56).
Kaul, S. N., M.B., CH.B. (1946-47 & from 1949-50).
Kutumbiah, P., B.A., M.D., M.R.C.P. (1945-46 to 1948-49).
Mehta, Chamanlal M., M.B.B.S., F.R.F.P.S. (from 1949-50).
Mehta, Jivraj N., M.D., M.R.C.P. (1945-46 to 1948-49).
Mukerji, P. B., B.SC., M.B., D.M.R.E., F.R.C.S., F.F.R., CAPT. I.M.S. (LATE) (1946-47 & 1954-55).
Mulay, B. V., M.S. (from 1950-51).
Rau, U. Krishna, M.B.B.S., M.L.A. (from 1955-56).
Sen, S. C., B.SC., M.B., D.M.R.E., CAPT. (1946-47 to 1948-49 & from 1953-54).
Shivapuri, H. N., M.B.B.S., CAPT. I.M.S. (RETD.) (from 1949-50).
Singh, Bhupal, B.A., M.B. (1945-46 to 1947-48).
Tirumurti, T. S., B.A., M.B. & C.M., D.T.M. & H. (1945-46 to 1952-53).
Ukil, A. C., M.B., M.S.P.E., F.C.C.P., F.N.I. (from 1955-56).

Appendix 5—Members of Journal Committee

Amir Chand, LT.-COL. I.M.S. (RETD.), General Secretary, I.M.A. (*Ex-officio*) (1948-49).
Bagchi, S. N., M.SC., M.B., M.O. (1938-39).
Banerjea, J. C., M.B., M.R.C.P. (1932-33 & 1933-34).
Basu, Charu Chandra, B.A., M.B. (1934-35 to 1939-40).
Basu, N. N., L.M.S. (1932-33).

Basu, Sushilkumar, M.SC., M.B., D.T.M., D.P.H., PH.D. (1944-45, 1945-46 & 1948-49).
Bhaduri, B. N., M.B. (1940-41 & 1942-43 to 1946-47).
Bose, A. K., M.SC., M.B., M.R.C.P. (from 1955-56).
Bose, (Miss) Maitreyi, M.B., M.D. (1934-35 to 1937-38).
Bose, Sunil C., M.B., M.R.C.P., D.T.M. (1937-38).
Chakrabarty, Anilkumar, M.B. (1940-41 to 1946-47).
Chakravarti, H. S., M.D. (from 1953-54).
Chatterjee, S. C., M.B., M.R.C.S., M.R.C.P. (1942-43).
Chatterjee, Sisir Chandra, M.D., M.R.C.P., D.P.H. (1941-42 & 1942-43).
Chatterji, K. K., F.R.C.S.I., LT.-COL. I.T.F. (1934-35 to 1936-37).
Chaudhuri, K. C., M.B. (1932-33, 1933-34 and 1937-38).
Das, Amalananda, M.B., M.R.C.S., M.R.C.P. (1951-52—till death on 1-11-56).
Das, K. P., M.B., F.R.C.S. (1949-50 to 1952-53).
Datta, Subodh, M.B., F.R.C.S., L.M. (1940-41, 1941-42 and 1948-49).
Dutt, J. N., B.SC., M.B. (1932-33 to 1939-40).
Ganguly, P., L.M.S., D.T.M., CAPT. I.M.S. (RETD.) (1939-40 & 1940-41).
Ghosh, Aghorenath, M.B. (1932-33 & 1933-34).
Ghosh, H., M.B. (1932-33 & 1933-34).
Ghosh, S. M., M.B., F.R.C.S. (1953-54 & 1954-55).
Ghosh, Tarit Kumar, M.D. (1948-49 & 1949-50).
Guha, P. K., M.B., M.R.C.S., D.O.M.S. (1946-47, 1947-48 & from 1949-50).
Mazumdar, D. C., M.B.B.S., M.R.C.P. (1940-41 & 1941-42).
Mukerji, Amarnath, B.SC., M.B., F.R.C.S. (1940-41 to 1946-47).
Mukerji, P. B., B.SC., M.B., F.R.C.S., D.M.R.E., F.F.R., CAPT. I.M.S. (RETD.) (1935-36 to 1939-40, 1941-42 to 1945-46, 1947-48 & from 1955-56).
Mukharji, A. D., L.M.F., F.S.M.F. (1939-40 & 1949-50 to 1955-56).
Mukherjee, C. L., M.B., M.O., M.R.C.O.G., PH.D. (from 1950-51).
Mukherji, G., M.B., M.D. (1933-34).
Nandi, G. C., M.B., M.R.C.O.G. (1942-43 & 1943-44).
Neogy, B. P., M.B., M.R.C.S., M.R.C.P. (1940-41 to 1949-50).
Rakshit, P. C., M.SC., M.B. (1937-38).
Ray, K. S., M.A., B.SC., M.B.CH.B. (1932-33—till death on 24-10-50).
Ray, P. N., M.B., F.R.C.S. (1938-39 to 1940-41).
Roy, A. N., B.A., L.M.F. (1947-48, 1948-49, 1950-51, 1953-54 & 1954-55).
Roy, B. B., M.B. (1944-45 to 1948-49).
Roy, H. K., M.D. (1950-51 to 1954-55).
Roy, Satyaban, M.SC., M.B., F.R.C.S., D.L.O. (1934-35).
Saha, C. C., M.SC., M.B., D.T.M., M.R.C.P., F.R.F.P.S. (1943-44 to 1945-46).
Sanyal, P. C., M.B., F.R.C.S. (1947-48).
Sarbadhikari, K. C., M.B., F.R.C.S. (1946-47 & 1947-48).
Seal, S. C., M.B., D.P.H., F.A.P.H.A. (1949-50 & 1951-52 to 1955-56).
Sircar, Nilratan, Sir, KT., M.A., M.D., D.C.L. (1932-33 to 1941-42).
Sen, Anilkumar, M.B. (1933-34 to 1939-40 & 1949-50).
Sen, B. B., M.SC., M.B. (1934-35).
Sen, (Mrs.) Muktha, M.B.B.S., D.M.C.W., M.P.H. (1951-52 & 1952-53).
Sen, R. C., M.B. (1946-47).
Sen, S., M.B. (from 1955-56).
Sen, S. C., B.SC., M.B., D.M.R.E., CAPT. (LATE) (1946-47, 1951-52 & 1952-53).
Sen, Susilkumar, M.B. (1932-33).
Sen Gupta, K. K., M.A., B.SC., M.B., D.T.M. (1947-48 & 1948-49).
Sen Gupta, S. C., M.D., F.R.C.S. (1934-35 to 1936-37).
Sinha, Ranajit, B.SC., M.B., M.R.C.S., L.R.C.P., L.M., D.G.O., D.R.C.O.G. (from 1947-48).
Tribedi, B. P., M.B., D.B., F.N.I. (1943-44 to 1945-46).
Ukil, A. C., M.B., M.S.P.E. (1932-33, 1933-34 and 1935-36 to 1939-40).

Some Stalwarts of the Indian Medical Association

IN THE PHOTOGRAPH AT THE LEFT ARE THREE PRESIDENTS : (FROM LEFT) DR. T. N. BANERJEE, THE LATE DR. T. S. TIRUMURTI AND DR. JIVRAJ N. MEHTA. SITTING (LEFT TO RIGHT) IN THE OTHER PHOTOGRAPH ARE FOUR OTHER PRESIDENTS : DR. S. C. SEN, DR. A. C. UKIL, DR. C. S. THAKAR AND DR. CHAMANLAL M. MEHTA. STANDING (FROM LEFT) CAN BE SEEN DR. P. K. GUHA, EDITOR OF THE JOURNAL, AND DR. A. P. MITTRA, GENERAL SECRETARY OF THE IMA.

IN RETROSPECT: A REVIEW

L. K. GANGULI, B.SC., M.D., M.R.C.P.

Journal of the Indian Medical Association

The Indian Medical Association was founded in 1928. The sponsors felt that to bring together medical men under the I.M.A., to foster a closer relationship amongst the profession and to give expression to its united voice, a monthly Journal was needed. Thus was born in 1930 the *Indian Medical World* which was rebaptised as the *Journal of the Indian Medical Association* in September 1931.

From the very beginning the Journal had to fight against intolerable and unjust conditions which the profession was subjected to. The editorial comments were frank and vigorous criticisms appeared from time to time against vested interests in matters of medical education, medical relief, public health, etc.

At the end of a quarter of a century, let us look back and compare notes. We shall learn how much of our past efforts of safeguarding the material interest of the members of the profession have been rewarded. With the achievement of freedom it was hoped that the editorial responsibilities would be limited only to guide, to help and to advise the Government, in the best interest of the people and the profession. We thought that the evils of 200 years of alien rule could be done away with.

It was not expected that the legacy left by way of maladministration, bad planning and indifferent preventive measures would be wiped away overnight. But surely it was anticipated that the Government would gradually remove the grievances the profession suffered from and difficulties it had to face in the pre-Independence days.

A few extracts from the editorials, resolutions and comments which appeared in this Journal from 1930 till date are here presented to the readers. Let the readers themselves judge how much has been achieved and reflect in what way the blemishes and the superior attitude of officialdom can be removed.

Let us begin with the message which appeared on the first page of the first number of *this* Journal.

Every word, every emphasis in this message are true in every respect even today.

The world is changing fast. A revolution has taken firm grip of all world problems—social, economical, religious and political. Lives there a man today, in India, who has not felt its repercussions? The age-old problems of the medical profession with their usual solution cannot satisfy the changing conditions of today. New orientation has to be brought about. These problems have to be reiterated and if necessary, recast in view of the present circumstances and new solutions have to be found out. Fresh adjustments have to be made in view of the altered conditions in India. The provision for efficient medical education, for granting medical relief, for the establishment of schemes of preventive medicine and the encouragement to indigenous industries for the supply of appliances and drugs—all these have to be considered afresh and reviewed in regard to the changing circumstances. The relationship of the Western system of medicine to indigenous Ayurvedic and Unani systems, the question of basing all these systems on proper scientific foundations, the laying down of a scheme for the purpose of achieving a renaissance of the older systems of medicine, the arrangement for providing drugs at a cheap cost to the poor masses of India—all these have to be discussed and decided in the light of modern trend of events. The protection of the lay public from the vagaries of quacks and charlatans on the one hand and the manufacturers of nostrums and quack medicines on the other, requires energetic and consistent attention.—Rov, B. C., 1 : 1, 1930.

After a long period of trial and tribulations a new epoch started in India on the 15th August 1947, and the country emerged as a Republic with a new Constitution on the 26th January 1950. On these solemn occasions co-operation was offered to the new Government, in the uphill task in its constructive activities and planning. The legacy which was inherited after 200 years of alien rule was editorially commented on. Along with these, extracts from presidential addresses delivered eight to nine years *after* are given for a comparative study.

1947—About 200,000 women die every year from diseases and conditions associated with pregnancy and child bearing. The average number of deaths during 1932-41 from cholera was 144,924, from smallpox 69,477, from plague 30,932—all preventable diseases. There are about 2·5 million tuberculosis patients in an infective stage in the country and there is only a total of 6,000 beds to provide facilities for their isolation. The number of doctors with sufficient experiences of tuberculosis work to qualify them for posts in tuberculosis institutions does not exceed 70 or 80. At least 100 million people suffer from malaria every year and at least 2 million die

each year directly or indirectly as a result of this disease. The number of hospital beds available for the treatment of general and special diseases is about 73,000 or about 0·24 bed per 1,000 population. In the Indian Union there are approximately one doctor to 6,500 people, 1 nurse to 43,000 people, 1 health visitor to 400,000 people, 1 midwife to 60,000 people and 1 dentist to 300,000 people. The death rate for the general population in 1947 was 22·4 per 1,000 inhabitants and for infants under one year 162 per 1,000 live births. Famine and pre-famine conditions are general. The simplest prerequisites of healthy living such as adequate nutrition, good housing, sanitary surroundings and safe drinking water are lacking in vast tracts of our country and only available to a privileged few living in the large cities.—EDITORIAL, **16**: 392, 1947.

1950—Everything in connection with Public Health and Medical Relief that was handed down to us, was what was planned and executed by the Britishers after their own ideas in a line with their own manner of work. Therefore the whole framework of medicine, medical education, medical services and medical administration of the country as it exists today is the legacy of the British Government. There is great and immediate need of recasting and remodelling the whole thing on an advanced and up-to-date model, so that it may function immaculately for the greatest good of the greatest number.—EDITORIAL, **19**: 233, 1950.

1955—Malnutrition, deficiency in food production, inadequate supply of safe water, poor environmental conditions and bad housing, insufficient educational facilities, lack of communications, general poverty, unemployment, social prejudices, improvident maternity, meagre health measures and inadequacy of medical facilities continue to be our problems as before.—SEN, S. C., **24**: 342, 1955.

1956—The number of beds for tuberculous patients is 20,000. The annual morbidity from malaria has fallen to 250,000 and the annual death rate of infants per 1,000 live births is 115·9. There is now 1 hospital bed for 3,000 people, 1 doctor for 6,019 people, 1 nurse for 35,700 people, 1 health visitor for 595,000 people, one midwife for 29,750 people, 1 dentist for 104,784 people and one qualified pharmacist for 476,000 people.—UKIL, A. C., **27**: 173, 1956.

QUACKERY

Practice of medicine by unqualified persons which generally goes by the name of quackery is also another of the serious evils with which the profession has to contend. This is still flourishing because of widespread prevalence of ignorance and superstition. The other important factor is the economic condition of our villages.

In India, unfortunately, the economic condition of the rural population is so low that it hardly ever offers any attraction to qualified men to settle in villages for a living in spite of the attempts that are now being made in some provinces to subsidise them. There is no Health Insurance and hardly any Public Medical Service; consequently qualified persons are crowding into the towns and cities even at the risk of a precarious existence, leaving the poor villagers to the tender mercies of the quacks. The result of this on the health of the people can be better imagined than described. I am very confident that introduction of health insurance or a system of local subsidy will more and more lure the qualified people to the villages and enable them to liquidate quackery in course of time.—RAY, K. S., Presidential address, 1940.

The first attempt to remove this evil through legislation was made in Travancore in 1943. The Travancore Medical Practitioners Act was passed by the State legislature, so as to regulate the qualifications and provide for the registration of practitioners of various systems of medicine with a view to encourage the study and spread of such systems. In the rest of India, the Medical Acts do not prevent unqualified persons from practising medicine. So quacks continue to thrive and bogus medical institutions, degrees and diplomas are making a rich harvest.

We congratulate the Government of Travancore on the wise step they have taken to protect the health of the people. Travancore has given the lead. Will the rest of India follow?—Editorial, **13**: 55, 1943.

The main cause of the great prevalence of quackery is the low economic condition of our people, apart from ignorance and superstition. The evils of quackery have increased to such a great extent that some suitable action should be taken by the Government to protect the people. Without legislation by Government very little is possible. The Indian Medical Association has been requesting the Government to take effective measures to prevent such unqualified practice. The health of the public should not be played with by irresponsible quacks.—TIRUMURTI, T. S., **21**: 15, 1952.

A good deal has been said on the subject of quackery. We are convinced that the time is ripe, if not long overdue, for the Union and the State Governments to take firm and immediate steps to stop this evil. Its deleterious effects on the health and financial resources of the people are only too well known. In so far as our profession is concerned, it is also well known that fully qualified medical practitioners suffer considerably in competition with unscrupulous quacks, who conform to no rules regarding advertisements and false claims. Unless quackery is checked effectively and speedily, there will remain little incentive for proper training, qualification, licensing and registration.—SEN, S. C., **24**: 345, 1955.

That the practice is still continuing and nothing has yet been done at other States to stop the necessary evil will be revealed by resolutions passed in the 31st All-India Medical Conference (1954). In this conference the Union and State Governments were urged to stop the practice of medicine by unqualified persons by suitable legislation and making practice by quacks a cognisable offence, and to declare definitely and cate-

gorically that their ultimate aim is the adoption of the M.B.B.S. standard in modern medicine as the minimum qualification for medical practice throughout the country.

Hospital Accommodation

The problem of hospital accommodation and ethics related to hospital administration have always been subjects of criticism. Uncharitable remarks and presentation of one-sided picture for a news 'scoop' though rare were not altogether absent. This was illustrated in a case of a motor car accident.

The science and art of Medicine and Surgery are not yet perfect. Would they ever be perfect? On many occasions we have to be undecided in the matter of admission, treatment and discharge of patients. Hospital accommodation and resources are not what they could be.

The public unfortunately do not realise nor recognise these facts.

The patient was admitted with a suspected injury to his brain. I kept on postponing the operation and I received a letter from some one asking for an explanation why the patient had not been operated. My House Surgeon was rather perturbed as he had read the letter, but I told him to wait and watch and to write to him saying we are watching and waiting. This matter I think found publicity in the papers but when the patient returned home, hale and hearty without having undergone a rather risky operation, I had a most apologetic letter from the same gentleman; this I may incidentally mention did not find publicity in the papers. —Chatterji, K. K., **1**: 338, 1930.

Lots of patients are discharged, earlier than they should be, to make room for more serious ones. Several patients are asked to wait till room could be made for more serious ones.—Wadia, H. J., **2**: 24, 1931.

Nonrecognition of Medical Degrees

On the 24th February 1930 the General Medical Council (Great Britain) decided

That in the absence of authoritative information respecting the medical qualifications and standards of the Indian Universities of Bombay, Calcuta, Lucknow, Madras and Punjab, the Executive Committee of the Council, in fulfilment of its duty under the Medical Act, 1886, Section 13, is unable for the time being to recognize the medical degrees of these universities as 'furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery' in this country; and that accordingly the conditional recognition hitherto granted to these degrees has now lapsed.—**1**: 99, 1930.

What followed the announcement is interesting. Messages received from the present Prime Minister of India and the present Chief Minister of West Bengal, were quite eloquent. What is intriguing is that *the ban is still in existence for the Medical Graduates of 1926-1929.*

I have welcomed the decision of the British Medical Council to refuse to recognise Indian medical degrees. I hope this will make our medical practitioners and hospitals stand on their own legs and not to look up to England or to what is miscalled the Indian Medical Service. We all know how Indian medical students have been treated in Great Britain. The sooner Indians stop going to Great Britain for their studies and instead go to Continental countries of Europe the better it will be. They will get both better education and better treatment there.

I understand that the Indian Medical Association is organising a boycott of British drugs and medical requisites and specially wants to prevent dealers from sending lucky day indents on the fourteenth. I agree entirely with the proposal and hope that dealers will support it. Both self-respect and the national struggle demand it.—Nehru, Jawaharlal, President, Indian National Congress, **1**: 90, 1930.

The action taken by the General Medical Council in withdrawing recognition of Indian medical degrees should be sufficient to direct our attention to the actualities of the present situation. The Council desires a supreme control on the medical profession in India. This attempt is intended to create a deep-seated impression in the minds of the younger members of the profession that everything British is superior. Once we begin to applaud everything British, the way is clear for dumping British medical goods in the Indian market. Let us break this vicious circle. I appeal to all medical practitioners not to order British medical goods on the lucky day. I have made careful enquiries and I am of opinion that nearly all medical stores can be imported from countries other than England. Many firms in Calcutta have informed the Secretary of the Indian Medical Association that they are not going to indent prepared British medical goods. This boycott can only be effective if the doctors work in co-operation with the chemists.—Roy, Bidhan Chandra, President, Indian Medical Association, **1**: 90, 1930.

The withdrawal of recognition of our degrees by the G.M.C. naturally brought the question of creating a legally constituted all-India Medical Council into prominence.

Medical Council of India—Then and Now

In spite of opposition from medical associations and individual luminaries of the medical profession the Bill was passed into an Act in 1933 during the days of foreign domination. The IMA has been pressing since 1933 to amend the Act. With attainment of freedom hopes were raised high and every one was looking forward eagerly to see that the Union Government scrap the offending Act and replace it by a new Act. The Government whenever approached gave assurance that the Act would be amended shortly. After a "short

period" of eight years a draft of the Bill was prepared. The IMA happened to get a copy of the draft and immediately suggestions were communicated to the Government. The Minister in charge of Health assured that the existing IMC will be consulted before the Bill was placed for consideration. It was surprising for the Association to find that both the IMC and the IMA had been ignored by officialdom and the Bill was passed by the Rajya Sabha, without incorporating suggestions of IMA of far-reaching importance. The IMA again pointed out the defects and requested the Health Minister to incorporate all suggestions made by it. The Bill has now been passed by the Lok Sabha too without much change. Once again the same example of bureaucratic mentality as of the British regime is evident.

The proposed Government Bill to establish a Medical Council in India, was circulated by Government of India, Education, Health and Lands Department, from Simla on the 31st August, 1931. The principal provisions were :

3. Constitution and composition of the Council. —(1) The Governor General in Council shall cause to be constituted a Council consisting of the following members, namely :—

(a) the President, who shall be nominated by the Governor General in Council ;

(b) one member from each Governor's province, to be nominated by the Local Government of the province ;

(c) one member from each Governor's province, to be elected from amongst themselves by the members of the Medical Faculties of British Indian Universities within the province ;

(d) one member from each province in which a Provincial Medical Register is maintained, elected from amongst themselves by persons enrolled on such register who hold qualifications in medicine granted or recognised by any British Indian University or by any other medical institution which the Governor General in Council may specify in this behalf ; and

(e) three members to be nominated by the Governor General in Council.

Extracts from editorial comments which appeared in the wake of the first introduction of the Bill in 1931 and the present one in 1956 along with the comments made by Dr. B. C. Roy, while inaugurating the Silver Jubilee session of the Lucknow Branch of the Indian Medical Association given (*infra*) should prove interesting.

The very first clause in the constitution regarding the nomination of the President was objected to, particularly because of an unpleasant happening in Bengal at that time which was an example of the action of a nominated President. The nominated President of the Bengal Council of Medical Registration refused to allow three members of the Sub-Assistant Surgeon group to attend the meeting held on 11-3-1930 on the ground that though they had been declared elected their names had not been gazetted. Yet the President allowed an official member, Col. Harnet, to attend the meeting though his name had not been gazetted. In this way the official group was unfairly strengthened.

If we are to have an All-India Medical Council it must not be dominated by vested interests. It must be controlled by persons who have needs of the profession and of the progress of medical relief and public health in India, really at heart. *The Statesman*, of course, hopes that 'some who have already expressed themselves violently will not find their way into the new body'. Dominated as it is by vested interests *The Statesman* could not hope otherwise, but we fear that their pious hope will not be fulfilled. For, if the proposed All-India Medical Council is a representative one, we fear the majority will consist of those who have expressed themselves 'violently'. The result will not be favourable perhaps to those interests which *The Statesman* represents, but India will gain thereby.—EDITORIAL, **1** : 74, 1930.

The Bill, as it stood, was a negation of democratic principles. It was another attempt to saddle medical education and the independent section of the Indian medical profession with official control. The attempt was well disguised, but it deceived no one. So far as the Indian Medical Association was concerned, it spoke in no uncertain terms. The resolution adopted at the Conference held at Poona emphatically declared that the Council should be independent and predominantly non-official, that adequate representation should be provided for the independent medical practitioners, that both graduates and licentiates should be represented and that the President should be a non-official from the very inception of the Council.

This was the voice of the independent section and the claim is in no way abated. In one of these particulars, however, does the Bill meet the claim. It should be remembered the independent section forms by far the largest element of the medical profession in India. This large and preponderating element, however, is to be subordinated to the interests of a handful of officials. —EDITORIAL, **1** : 108, 1931.

The All-India Medical Conference fully endorsed all the recommendations of the Indian Medical Association in regard to the different provisions of the Indian Medical Council Bill, particularly regarding the Preamble of the Bill

so as to not only provide for the maintenance of a register of qualified practitioners but also to establish a uniform minimum standard of qualification for all the provinces of India and regarding the composition of the Council, namely, that the Council should have an elected President from the beginning and that the composition of the Council should be as follows :

(i) 3 persons to be nominated by the Governor-General-in-Council.

(ii) 1 person to be elected by the provincial committee from amongst members who have been elected to this body.

(iii) 1 person to be elected by the members of Senate or University Court of an Indian University with a Medical Faculty.

(iv) 1 person to be elected by the medical practitioners resident in a province in India and registered in a Provincial Medical Register and who possess any qualification, granted or recognised by an Indian University or who possess any recognised medical qualifications under amendment of Section 18 of this Bill.

(v) 1 representative of licentiates registered in each Provincial Medical Register.

In view of the fact that the amendments proposed by the Indian Medical Association were fundamental to the successful working of the Bill, the Conference adopted them and authorised the Indian Medical Association and other medical associations in India to take necessary steps to get the amendments accepted by the Legislative Assembly. The Conference was further of opinion that unless the amendments were adopted, the medical profession would be justified in refusing to accept the Bill.

The Indian Medical Council Bill, 1956 (Bill No. VIII-C of 1956) as passed by the Rajya Sabha was a Bill to provide for the reconstitution of the Medical Council of India, and the maintenance of a Medical Register for India and for matters connected therewith.

The Bill to be enacted by Parliament in the Seventh Year of the Republic of India was as follows :

1 Short Title, Extent and Commencement— (1) This Act may be called the Indian Medical Council Act, 1956.

(2) It extends to the whole of India except the State of Jammu and Kashmir.

(3) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

* * * *

3 Constitution and composition of the Council.—

(1) The Central Government shall cause to be constituted a Council consisting of the following members, namely :

(a) one member from each State to be nominated by the Central Government in consultation with the State Government concerned ;

(b) one member from each University to be elected by the members of the medical faculty of that University from amongst themselves ;

(c) one member from each State in which a State Medical Register is maintained, to be elected from amongst themselves by persons enrolled on such Register who possess the medical qualifications included in the First or Second Schedule or in Part II of the Third Schedule ;

(d) seven members to be elected from amongst themselves by persons enrolled on any of the State Medical Registers who possess the medical qualifications included in Part I of the Third Schedule ;

(e) six members to be nominated by the Central Government :

After a careful perusal of this Bill, it would be obvious that the Bill has been so arbitrarily drafted that it is not likely to serve any useful purpose for the betterment of medical education in India. Before the Bill is placed before the Lok Sabha it needs a thorough revision, lock, stock and barrel.—EDITORIAL, **27** : 323, 1956.

The Bill has been shaped in the old bureaucratic style of the preceding alien rule in India. In this Bill, attention has been directed more towards strengthening government control in its diverse functions. In a democratic country, the Bill is a most undemocratic production of the government.

In the framing of this Bill, the Indian Medical Council and the Indian Medical Association have been fought shy of. The Health Ministry's self-sufficiency in a matter which relates to the growth and development of a really efficient medical system in the country is puzzling to us.

Recently the Indian Medical Association had prepared a Memorandum on this Bill for consideration of the members of the Lok Sabha before it is presented for acceptance. This Memorandum contained the following suggestions :

1. (*a*) Two representatives from the members of the medical profession from each State through joint electorate, (of which one seat shall be reserved for the medical graduates).

   (*b*) One representative from each State Medical Council in order to maintain a close contact and co-ordination

between the State Medical Councils and the Indian Medical Council.

(*c*) One representative of the Indian Medical Association.

The Indian Medical Association has always urged that there should be one Schedule and one Register for Graduates and Licentiates qualified in India, with individual academic qualifications mentioned against their names. Regarding representations in the proposed Council, the IMA suggested a joint electorate providing for two seats from each State with safeguards for the minority.

Regarding the Post-graduate Medical Committee, the government wants to provide for six nominated members and three members elected by the Council. The IMA wants to reverse the position, i.e., six members elected by the Council and three nominated by the government.

The Indian Medical Association sent a deputation to the government and laid on the table the Association's well thought-out views and suggestions to which the government assured due consideration. But in spite of this, the government has apparently been trying to rush the Bill through the Lok Sabha.

The IMA wants the Bill to be broad-based and popular in principle. The Bill should fulfil the genuine obligations of a democratic government towards the people and the medical profession. Tightening government control as has been planned in the Bill is only a retrograde measure and opposed to all progressive ideas. The government's failure to recognise the opinion of the Indian Medical Association is a defiance of the valued opinion of the experienced members of the medical profession of the country and the Bill, if passed in its present form, will amount to a perpetuation of the Medical Council Act of 1933 with slight modification which is likely to convert the Council into a demi-government body.—EDITORIAL, **27** : 440, 1956.

According to Dr. B. C. Roy, the Indian Medical Council does not represent the professional interests only but also other interests of the people at large. It must raise its voice against any Governmental measure which tended to put restrictions on it.

We did oppose amendments in the Indian Medical Act, 1956 which sought to authorise the Central Government to nominate the State representatives to the Indian Medical Council, for the States know better than the Centre, as to who is most suited to represent the interests of a particular State.—ROY, B. C., Lucknow, 1956.

BAN ON MEMBERSHIP

Indian Medical Association and Government Ban on Membership

Recently the Government of India issued notifications to medical men in Government service pointing out the implications of Government Servants' Conduct Rules in regard to the membership of Government servants of the Indian Medical Association.—**2** : 418, 1933.

Ban Imposed by the Madhya Pradesh Government on Medical Men in the State Employment

The Madhya Pradesh Government issued a ban on service doctors in M.P. State against joining the IMA and continuing membership of the IMA without specifying any reasons for such action.—**24** : 356, 1955.

Ban on membership by a Government run by aliens may be understood. It is surprising that the national Government of a State should be putting a ban on a national association like the I.M.A. without specifying reasons. The ban imposed by the then Government of India was ultimately withdrawn but the 'national' ban, curiously enough continues.

QUESTIONABLE PLANNING

The bugbear of any expeditious and all comprehensive renovation is the slender financial resource of the country. The editorial remark and remarks made by the Union Health Minister are quite explicit.

The spectre of dwindling revenue and deterioration of unprofitable capital investment is stalking the land. India is faced with a financial crisis which is both grave and unprecedented. We need not be over-cheerful over our political freedom, therefore, as our economic emancipation still remains to be worked out by hard and sustained efforts by all our countrymen for a none-too-short period of futurity.—EDITORIAL, **19** : 233, 1950.

It is therefore a difficult task for the Health Ministers of the various States to wrest from the revenues of the State anything in the neighbourhood of an adequate sum for expenditure on health services. It is more than unfortunate that for reasons of financial stringency, which seems to be perhaps for us a chronic complaint, even the Short-term Health Plan recommended by the Health Survey and Development Committee could not be implemented.—KAUR, RAJKUMARI AMRIT, **22** : 213, 1953.

In view of the bad financial condition it was the more necessary to be vigilant. Utilisation of all available resources combined with expert planning could have solved many health problems even with slender finance. It is most discouraging to read the observations of the Union Health Minister, made in the 15th Session of the Central Council of Health held at Ranchi on 14-12-56, which run as follows:

The sense of urgency which health programme demands has not yet been fully appreciated by the State Health Departments.

She further observed that the assistance offered to the States in connection with the health schemes in the First Plan had not been fully utilised by them despite the fact that they had shown considerable keenness to take advantage of

such assistance. A large amount of funds, already sanctioned had, therefore, to be surrendered.

Health Journals of I.M.A.

The Journal is now 25 years old and is in the prime of its manhood. It can boldly be said that at least one wish of the parent body has been fulfilled. The Journal has offered facilities to the profession to record its views and experiences for mutual benefit and thus serve as a forum for the dissemination of knowledge and information to those who are scattered all over the country.

The publication of *Your Health*, a lay health journal, was started from January 1952. It is meant for the general public so as to arouse health consciousness amongst the people. The prophecy of 1953 (*infra*) has partly been fulfilled : the lay journal is now being published in English from the Journal office at Calcutta, *Apka Swasthya* in Hindi by the Banaras Branch and *Amar Swasthya* in Assamese by the Assam State Branch.

The lay journal *Your Health* has drawn closer to the heart of the public, thanks to the loyalty and sacrifice which is ungrudingly offered by the staff of the Journals. The Government of India has included health education of the public in their 5 year plan. But the I.M.A. had already given shape to its scheme of propagating health knowledge amongst the lay public through the medium of *Your Health*, a health journal, which is being published in English since January 1952. With the progress already in sight it may not take long to publish this journal in the principal regional languages of India.—Mulay, B. V., **22** : 202, 1953.

We have to educate not only our masses, but also our intelligentsia and even our leaders, if we are to achieve our ideal of positive health. An attempt in this direction has been made by the Association, through the publication of the lay periodicals, *Your Health* and *Apaka Swasthya.*'—Sen, S. C., **24** : 346, 1955.

Dr. Gregg's recommendations to the Government should prove of great interest to the Indian Medical Association. The paragraph ran thus :

The magazine of the Indian Medical Association—*Your Health*—could be used as a means of spreading information on medical education, research and public health. Aid in the form of 5,000 paid subscriptions to be sent to newspaper editors, legislators, State Government officials and members of the profession would help to produce better understanding of medical education than now exists.

The aim of the article is not to adversely criticise but to point out how important issues and long-term decisions with regard to the material interest of the medical profession have been forced through or shelved to suit the interest of Authority, without paying any heed to the valid objections and reasoned suggestions of the Association.

To be able to express our views with greater force and better effect, to add strength to our demand and give weight to our arguments it is vital that all the members of the medical profession in India should join hands with this National Association. It is sad to note that only twenty-seven per cent of doctors are members of I.M.A.

Twenty-Five Years Ago : Economic Plight of Doctors and Medical Education

On casting a glance at the year that has just ended, the first thought that occurs to one is the pronounced economic depression that has prevailed in the medical profession, in common with the rest of the community. But perhaps the distress is more acute in our profession than in any other, for the reason that medicine is a vocation of the learned, and learning has fewer rewards, except when acquired for its own sake. The training of the undergraduate is long and expensive, and the future prospects of the qualified doctor less promising than ever.

The general consensus of opinion, as given in the answers by medical practitioners as well as by the lay bodies, showed that there was evidence of an increasing difficulty in earning a reasonable livelihood, especially among the junior members of the profession, and that even in some rich districts, where opportunities for private practice may be expected to exist. This is not confined to juniors, but is also felt by men who have settled down in practice for seven or eight years.

An integral part of this problem is the question of post-graduate medical education. The process of education ought not to end with the acquisition of a degree or diploma at the university or the medical school. It must be continued throughout life. Such continued training is of the utmost value to the practitioner himself and also to his patient. It is now well recognised that the medical practitioner should be given necessary facilities to refresh and add to his store of knowledge from time to time.

—Bhatia, S. L., *Indian M. Gaz.*, **66** : 511, 1931

PROGRESS OF MEDICAL JOURNALISM IN INDIA

A. D. MUKHARJI

Minister of Health, Government of West Bengal,
Late Editor, Journal of the Indian Medical Association and Your Health

Medical journalism in India started in the earlier years of the nineteenth century. Its growth, development and maturity took shape through nearly 130 years. Not much of reliable statistics are available to trace the history of this branch of medical literature prior to this period. The year 1825 can be singled out as very important in the field of medical journalism in our country. In this year the first known medical journal entitled *Transactions of the Medical and Physical Society of Calcutta* made its first appearance. A group of members of the medical profession, mostly Europeans belonging to the Armed Forces Medical Service, realised that it would be helpful to chronicle their experiences in medical and allied subjects for the information and consequent benefit of their colleagues who were scattered all over the country. Presumably, they also thought that such publications would bring forward a closer alliance amongst themselves. The start of this journal can be recognised as making a distinct landmark in medical journalism in this country.

The later half of the nineteenth century saw the rapid development and increasing popularity of modern scientific medicine all over the world, particularly in Asia. Prior to this, India depended on the teachings of the old Vedic scriptures and the code of health laid down by Manu which, it must be said, has been included in most of the modern concepts of hygiene. The oldest literature of Indian medicine is to be found in the Vedas which were as old as 1500 B.C. The fourth Veda known as the Atharvaveda deals with medical subjects. Our knowledge of Ayurvedic medicine is derived mostly from the writings of Sushruta, Charaka and Baghbhata.

The European doctors who first came to India were mostly ship surgeons. In 1614 the East India Company sent a Surgeon-General, John Woodall, to India. Several French, Italian, Armenian and other foreign doctors were also employed in the courts of some of the Indian rulers. British doctors were sent out to this country mainly to meet the needs of the army. These foreign doctors had to overcome many hurdles to learn the local languages and collect clinical materials for scientific study. Due to the absence of Indian practitioners professing scientific medicine in those days, the responsibility of evolving and developing medical journalism, publishing clinical materials and scientific ideas on medicine, naturally devolved on these foreign doctors, noted amongst whom were the British army medical officers.

Various measures which some of them adopted for publishing periodicals at intervals proved abortive because of their transfer from one station to another and in some cases due to the absence of facilities for printing the scientific articles. It may be mentioned here that in those days printing facilities were meagre and not available everywhere.

Medical journalism in India did not pay in the past, nor does it do in the present time except in a few cases. Naturally, therefore, most of the editors of medical journals in the past had to, as even today their modern counterparts have to, carry on their work as honorary officers. Naturally they had to devote the greater part of the time and energy for eking out a living for themselves and their families. Still it is a matter of some satisfaction that the older army surgeons and members of the Indian Medical Service who were not pestered with the problem of a living did help in initiating and successfully piloting medical journals in India till our Independence in 1947.

Teaching and research work in medicine during the last three or four decades have rightly been taken over more and more by the Indian medical men and women in many places. So also in the field of journalism the most successful journals in India today are being conducted by the local members of the medical profession.

Printing press was first started in India in 1774. Indian vernacular types began to be cut from wood in 1798 and metal types were manufactured and introduced later on under the patronage of Carey at Serampore, Hooghly, West Bengal. Modern scientific medical journalism steadily developed in India from March 1825 when the first professional periodical as mentioned in the beginning of this article, was published from Calcutta by Messrs. Thacker & Co., St. Andrews Library, being printed at the Baptist Mission Press. The Society which brought out this journal was founded in Calcutta in March 1823. As a token of encouragement, the then Government allowed this periodical to be sent out to the members of the Society in the mofussil post-free in

the first year of its publication. It will not be out of place if I mention here the objective explaining the publication in an editorial note which is reproduced below:

"Considerations affecting the prosperity and the credit of the profession in India, rather than aspiring to a competition with its distinguished and veteran combinations in Europe, led to the formation of Medical and Physical Society of Calcutta: publication was only a possible contingency. The immediate object was to give a concentric impulse to the detached members of the service, and to afford them augmented facility of information, as well as a new excitement to emulative exertion.

"Whatever advantages may be realised from enquiries thus favourably instituted, will be shared by us with our brethren of the West; but some benefits may be expected from an improved circulation of useful information amongst ourselves, which may be regarded as exclusively our own. The situation of medical men in India labours under many discouraging peculiarities. With the exception of the few among them, who are residents at the principal cities and civil stations, they are scattered far apart from each other, over a vast extent of country; they hear and see nothing of the stink of science, and catch but indistinct and partial glimpses of the advancement of knowledge. Their limited means and frequent removals, put it out of their power to provide themselves with regular and expensive supplies of books, and there are no public libraries beyond the limits of the Presidencies. They can derive, therefore, little benefit from recorded experience of others, and they have rarely any opportunity of confirming or correcting their own, by that of an associate, a rival, or a friend. Their scene of action is too restricted, and too entirely their own, to admit of emulation or ambition; and the official reports, in which alone their practice is commemorated, are too much matters of form and routine to merit or attract animadversion. So situated, it is not wonderful that their zeal dies within them: no man is independent of external stimulus, and the surest method of annihilating energies is to leave it to prey upon itself." Such was the background with which the periodical was published.

Three yearly volumes of this publication were published in 1825, 1826 and 1827. For the succeeding eight years the *Transactions* came out every second year. In 1837 the name was changed to *Quarterly Journal of Calcutta Medical and Physical Society* and six such issues edited by Drs. Goodeve and W. B. Shaughnessy, Secretaries of the Society, were made available to the members in 1837 and 1838. No further issue was published till 1842 when a big volume edited by Allen Webb was published. The last issue of this journal was published in 1845.

The Indian Journal of Medical Science, the second publication, also came out from Calcutta and was started by John Grant and J. T. Pearson in 1834. Dr. Frederick Corbyn took charge of this periodical and changed its name to *Indian Journal of Medical and Physical Science*. This journal continued till 1843 when it ceased to exist. This was the first monthly medical periodical published in India and was the result of private enterprise without any support from any organisation. Its reading text varied between 32 to 40 pages and was printed in closely packed bourgeois type and its size was royal quarto.

The Transactions of the Medical and Physical Society of Bombay was first issued in 1838 during the very year of the Society's origin. This journal is still in existence and can be recorded as the oldest surviving medical journal in India.

The Madras Quarterly Medical Journal started its career in 1839 under the editorship of Samuel Roger, a fellow of the Royal College of Surgeons and continued its life till 1843.

Three other periodicals were published in Madras. *The Madras Journal of Medical Science* edited by G. Flyn and D. Morton came out in 1851 and continued till 1854. Editor Flyn was the first medical editor in India who did not belong to the Army Medical Service. *The Madras Quarterly Journal of Medical Science* edited by W. R. Cornish and G. N. Montgomery came out in July 1860 and continued till 1869 when it was converted into a monthly. It was then edited by N. N. Chipperfield and Henry King and was published till 1873. With Chipperfield's death in May 1873 of cerebral haemorrhage, the journal came to its end too.

Delhi Medical Journal was published from Delhi in 1844 but it had a very brief career.

January 1848 saw the starting of the *India Register of Medical Science* edited by Edward Edlin. Twelve monthly issues were published. Edlin being deputed to the Punjab War in 1849 as field surgeon the journal stopped publication, as no one could succeed him to take charge of the same.

Announcement regarding the publication of a new medical journal from January 1, 1851, appeared in *The Friend of India* of the November 14, 1850 (p. 731), which ran thus:

"A New Medical Journal. The undersigned proposes to re-establish a Medical Journal, having

the title of the *Bengal Medical Record,* from the 1st of January, 1851. The Journal will be issued on the 1st or 2nd of each succeeding month, and the subscription per annum in advance is 20 rupees. Early intimations of approval and support are requested from all, who are of opinion, a Medical Journal in Bengal may be producive of good. (Signed) T. Hastings, Civil Asst. Surgeon, East Burdwan.

N.B.—All communications to be addressed, Postpaid, to the Editor, at Burdwan".

No record however is available whether it was published or not.

In 1854 the *Indian Annals of Medical Science,* a half-yearly journal of practical medicine and surgery, made its appearance. On the first issue of the periodical the date was printed as October 1853 and April, 1854. It was edited by Alexander Grant and Norman Chevers and was printed by R. C. Lepage & Co., British Library, Calcutta. Grant continued to be its editor till October, 1860. This journal continued till 1877 having a career of 23 years. Joseph Ewart and J. G. French were the last editors of this periodical which can be said to have had a long continued life in purely medical and scientific journalism.

The Indian Lancet made its first appearance at Lahore in 1859. It had a brief life.

Indian Medical Gazette was published in January, 1866, under the editorship of Surgeon Major D. B. Smith. This periodical was in charge of distinguished members of the Indian Medical Service all through its career except for a few years when Dr. L. E. Napier, a professor at the Tropical School of Medicine was its editor. After his retirement, the responsibility of editorship was taken over by an I.M.S. officer who later retired from service.

This journal must be considered to be one of the most successful ventures in medical journalism in this country and has been accepted as one of the reputed medical periodicals in India, older in age than even the *British Medical Journal* by six years. This is published by Thacker Spink & Co., Calcutta. In 1903-04 during Moir's editorship, associate editors for the journal were appointed in Bombay, Madras and Rangoon.

In 1880 a short-lived monthly under the name of the *Calcutta Medical News* was published. Eight monthly issues from January to August came out after which it ceased to exist.

January, 1890 saw the start of a new monthly journal known as *Indian Medical Record* owned and edited by J. R. Wallace. From January, 1893, it became a fortnightly and in January, 1899, it was converted into a weekly journal. After Dr. Wallace's death, the publication was stopped from the end of 1903 but it was revived as a fortnightly in April 1904 and continued up to March, 1906. Again it ceased publication for two years but was once more revived from March, 1908, when it came out as a monthly under the editorship of E. S. Pushong. It is still continuing, under the editorship of S. K. Mukherji. From this journal office was published a *Medical Register and Directory of Indian Empire* in 1892. A second edition came out in 1898.

In January, 1892, L. Fernandez started *Medical Reporter* from Calcutta. In November, 1895, the name was changed to *Indian Lancet.* For two years it continued as a monthly. From 1894 to 1900 it ran as a fortnightly and from 1901 as a weekly for some time.

From Bombay was published the *Indian Medico-Chirurgical Review* edited by Dr. H. N. Choksy in January 1893. It continued for 3 years up to 1896.

The Grant Medical College Magazine was started at Bombay in 1898 as a monthly journal and continued up to 1906. Subsequently it was converted into a quarterly publication.

A handwritten magazine by the name of *Scalp* used to be published by the students of the Calcutta Medical College towards the later part of nineteenth century under the editorship of student editor Suresh Chandra Mitra.

A monthly periodical named *Practical Medicine* was started at Delhi in January, 1903, by Ram Narayan, a retired assistant surgeon. From the office of this journal a *Medical Directory of India, Burma and Ceylon* was published in three parts.

In January, 1904, a monthly journal under the title of the *Calcutta Practitioner* was published from Calcutta. Only five issues were published, the last one in May, 1904.

The *Calcutta Medical Journal,* organ of Calcutta Medical Club commenced its life in July 1906 as a monthly medical journal and is still in existence. Eminent members of the profession in Calcutta were editors of the journal and are still associated with this publication.

The All-India Hospital Assistants' Association published its journal in January, 1907 as a monthly. From January 1910 the name of the Association was changed to All-India Medical Licentiates' Association and the name of its organ to *Indian Medical Journal.* It was published in the past from Bombay, Indore, Meerut, Calcutta, Madras and is now being published from Poona.

Medico-Surgical Journal of the Tropics edited by Dr. S. K. Mullick, issued from Calcutta in December, 1908, continued for a few years and then ceased to exist.

The Journal of the Association of Medical Women in India was first published in 1909 and is still continuing.

The Indian Journal of Medical Research was started as a quarterly medical journal from July 1913 as the official organ of the Indian Research Fund Association which was created in 1911. It was edited from Kasauli and was printed and published from Calcutta.

The Indian Medical Association was founded in 1928. In 1930 it published every month its organ under the name of *Indian Medical World* under the editorship of Sir Nilratan Sircar. In September, 1931, its name was changed to *Journal of the Indian Medical Association*. Its publication office is located at Calcutta. It is now issued twice monthly and its present circulation is about 20,000 copies, claimed to be the largest in India.

A monthly medical journal known as *The Antiseptic* edited by U. Rama Rau was started in 1904 and is still reckoned as one of the very popular journals from Southern India. Now it is being edited by U. Krishna Rau.

Indian Medical Forum a monthly medical journal is a recent addition to the field of journalism in Calcutta and is published as a result of private and individual effort.

There was a periodical known as *Medical Bulletin* published from Bombay with which now is incorporated *The Indian Journal of Medical Science*. Madras is publishing the *Indian Journal of Surgery* for the last 12 years.

The Indian Research Institute of Calcutta publishes *Annals of Biochemistry and Experimental Medicine* as a quarterly periodical.

The Asiatic Society of Bengal publishes a journal. Medical articles used to be included in it.

Another medical journal known as *Agra Medical Club Journal* used to be published from Agra. Ultimately it was incorporated with the *Indian Medical Journal*.

In the Urdu language, periodicals known as *Agra Medical Club Journal* from Agra, *Hikmat* (Knowledge) from Lahore and *Intakbea al Hikmat* (Extracts of Knowledge) from Lahore used to be published.

There were several attempts in the past to bring out medical journals in the provincial languages particularly in Bengali. From 1840 onwards and of about 150 such publications so far published, *Chikitsa Jagat* and *Swasthya Samachar* are still in the field.

Almost every medical teaching Institution in India has a quarterly or half-yearly journal of its own, contributed mainly by the students themselves and some teachers.

Patna, the capital of Bihar, started a quarterly, the *Patna Medical Journal*, in 1926 as the organ of the Patna Medical Association which ultimately merged into the provincial branch of the Indian Medical Association. The journal is still being published as *Patna Journal of Medicine*.

Several of the provincial branches of the Indian Medical Association have of late started bringing out the Transactions of their annual meetings in the shape of annual publications which have added to the list of medical journals in our country.

Provincial Medical Services Association of India had a quarterly journal named *Indian Journal of Medicine* which after the separation of provincial branches as independent units ceased publication.

Another publication known as *Medical Review of Reviews* was published from Calcutta for several years.

Quarterly medical journals dealing with special branches of pediatrics, radiology, venereology, ophthalmology, cardiology, and neurology have since been published mostly from Calcutta. Journals on ophthalmology and on venereology are published from Poona and Bombay.

Two other monthlies, *Indian Medical Review* (established 1926) and *Calcutta Medical Review* (established 1938), are published from Calcutta.

For educating the general public in matters of health, Madras published a journal known as *Health*. From January 1952 the Indian Medical Association has been conducting *Your Health*, a monthly health journal from its journal office at Calcutta. *Apka Swasthya* in Hindi and *Ámár Swasthya* in Assamese soon followed in the footsteps of *Your Health* and are published by the Banaras Branch and Assam State Branch respectively of the Indian Medical Association.

Some of the journals mentioned are organs of the various professional organisations and as such some pages are reserved for matters concerning the organisation ; transactions of the central and branch units are also given publicity in these columns.

Articles based on original work of the contributors, interesting case notes, articles on special subjects like preventive medicine, family planning, general nutrition and matters likely to assist general practitioners in their day-to-day practice are usually published in most of these journals.

At times articles of very high scientific and academic value find place in them. Excerpts from the medical press practically from all over the globe are published as special features in most of the periodicals to present before the readers

the developmental trends in medicine in different parts of the world. Many of them have exchange relations with foreign journals which frequently publish extracts from these. Some of them are indexed by the *Quarterly Cumulative Index Medicus*.

The size of these journals vary between demy quarto, crown quarto and royal quarto. Generally 10 pt. types are used but to accommodate more reading text 8 pt. types are also utilised in some of the journals. Some are printed in white printing or super calendared papers, imported or locally made. Some are printed in mechanical paper or newsprint all imported from abroad as these are not manufactured in India.

During the last great war medical journals in India suffered a lot from scarcity of printing paper, both locally made and imported. So Government had to ration paper of all varieties and drastic restrictions were imposed on all periodicals resulting in the reduction of reading as well as advertisement pages which affected most of the journals so much that some of them had to cease publication. Although conditions have improved since the termination of the war with all restrictions removed, the frequent and rather abnormal increase in the price of paper and its short and uncertain supply from abroad have become handicaps to almost every publication in this country.

Besides the annual subscriptions derived from the subscribers to the journals the other main head of revenue for most of these medical periodicals is the advertisement charges derived by letting out space to the drug manufacturing trade. There are ups and downs in this source of income as it depends upon the general fluctuating business trends of the market as a whole.

The annual subscriptions to these journals range between Rs. 4 and Rs. 18 and single copies are sold at between annas eight and rupees two. The cost of paper and printing has increased recently abnormally but the price of the journals could not be raised as the general economic condition of the average readers of these periodicals was not very satisfactory. Many journals had to reduce the number of complimentary and exchange copies and to cope with the increase in cost of paper, advertisement tariff had to be revised. It must be said to the credit of the advertisers in this country, that these were generally accepted much to the relief of the journals, many of which were having just a bare existence.

It will not be out of place to mention that of all the journals published in this country, *Antiseptic* of Madras only has a printing press of its own. *The Indian Medical Gazette* published by Thacker Spink & Co. can also be said to have a press of its own inasmuch as it is printed in Thacker's Press and Directories Ltd. owned by the same proprietors.

In this narrative an attempt has been made to present before the readers a short account of the many medical periodicals whose history could be traced from various sources.

This Idolatry of Medical Literature

"The age which invented the microphone is the age which has nothing to say" sang G. K. Chesterton. Our present age has not only produced broadcasting: it has given birth to scientific 'literature'—which grows with such prodigious proliferation that we now need the scientific 'abstract' to give us the essentials. Soon we may require a further publication to summarise the abstracts! The period which has given us these new means of acquiring knowledge, has it anything to teach in medicine? Much—too much, unfortunately—though the really important lessons remain as elusive as ever.

It would be sad were medical writing to fall permanently into disrepute on account of its own elephantiasis. To one who has learned to read properly, reading gives an enduring mental satisfaction. Today, we are faced with the inflation of 'literature' without a corresponding increase in the value of its content. The traffic in ideas is slowed down because there are too many vehicles of information moving along the narrow roadways of the mind. When more and more is written, we suspect that people (including doctors) read less and less.

Today there are more medical journals in the world than ever. Between 1950 and 1955, their total number rose from four thousand to five thousand.

Are we at the stage when we revere the written word to the point of idolatry? Undue multiplication of articles (accompanied by insufficient study of ideas) is apt to induce a contempt for writing, founded on satiety and boredom.

Behind some modern writing there lies a complex intellectualism which over-emphasises the scientific side of medicine, and minimises clinical and human values. In despair of understanding disease, our new scientific physicians find refuge inside an obsession with exact knowledge. In this are we repeating the errors of previous ages?

Medicine can never be an abstract science, and it should not attempt to become so. Medical 'literature' of this sort may be in reality the symptom of an intellectual malaise.

Everyone who produces a medical paper has a grave responsibility, not merely to his own career, but towards truth, towards readers in all countries, and to the journals which seek to make truth prevail.

—NAPT Bulletin, Oct. 1956

TWENTY-FIVE YEARS OF MEDICINE

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If one could stage a Rip Van Winkle act, go to sleep in 1931 wake up in 1956, what would he notice? What differences would strike an observer most? It is not easy for those of us who have been actively in the profession to notice striking changes because of their gradualness and we have to make an effort to recall them. The first thing that comes to our minds is that most of our cases in those days used to be bronchitis, pneumonia, malaria, bacillary dysentery, kala-azar, tuberculosis and typhoid. As we shall notice below that pattern has perceptibly changed. Our male patients were nearly twice as many as the female, partly accounted for by the lopsided distribution of sex in Indian cities; children were often treated not as children but as miniature adults. Special children's wards had been set up in hospitals but paediatry had yet to acquire the necessary status and another decade had passed before paediatry was given the recognition that was its due. At the other end of life, old patients were fewer then than now and few people above 60 years were alive and if alive, lively, in marked contrast with present day conditions when more old people seem to dominate the scene. We have therefore now to make a special study of senescence. Geriatry has become a complex subject requiring a great deal of attention. We have now an increasing number of aged patients, an increasing number of cases of arteriosclerosis, more cardiac cases, more cancer and more degenerative diseases of the nervous system. Such increase is partly attributed to fewer people dying of infectious diseases. Thanks to the discovery of potent drugs, more people are now alive to be caught up by degenerative diseases involving tissue changes.

Influenza, then included in the category of bacillary diseases, is now considered a viral one. Some virus diseases have generally now become commoner though, of course, eruptive fevers have been common enough for centuries. But diseases like virus encephalitis, virus pneumonia were unknown. Polio cases were rarer then though the fact that 50 to 80 per cent of the population in Europe harbours polio antibodies, even if only 1 per cent shows manifestations of polio, suggests that many a trivial flu type of fever may have been an aborted polio case.

Blood diseases have been looked at from a new angle and reclassified. Thus leukaemia has been admitted as a malignant disease in which Hodgkin's disease has already been admitted as a late entrant.

The year 1931 just preceded the advent of the sulphas; the army of antibiotics came later. Advancing *en masse*, like the German Tank Force in the early days of the late war, they have swept away everything before them. Pneumonia, bronchitis, diarrhoea, carbuncles, sepsis, typhus and typhoid and even cholera to some extent have been swept away like chaff before the wind. Dreaded tuberculosis and hated leprosy have lost much of their terror. Malaria, the true captain of the men of death in this country, has retreated so suddenly, spleens have become so scarce and if found, so much smaller as to leave a vacuum in the abdominal contents of the patients.

Kala-azar has also declined *pari passu*. Serum therapy which promised so much has become a declining art and except in diphtheria and tetanus has few advocates. Vaccines which raised great hopes have been almost discarded as curative agents though their value for prevention of infections like typhoid and cholera, or toxoids in diptheria and whooping cough, is unquestioned. BCG is a very helpful agent for the prevention of tuberculosis although there may be some controversy about its safety raised by acute legal minds.

The newer therapeutic agents, the spraying of fields and gardens with pestdestroying agents and preventive inoculation have so reduced the incidence of infectious diseases that people are living longer and getting a chance of succumbing to degenerative diseases. Our experience of diseases has also changed. Gone are the days of lobar pneumonia and its stages of hepatisation with the characteristic physical signs. Pneumonias are often of the atypical group. The amoeba, always a tough customer, is fighting gamely to the last and although apparently brought under control, often stages a resurrective battle making eradication difficult. But amoebic liver abscess so common 45 years ago has gradually gone down in size and number so that it is a rare affection indeed compared to what we used to get.

But many bacteria, like the amoeba, have developed new ways of surmounting the onslaught of the sulpha drugs and antibiotics. Although they have retreated pell mell they have left behind

the viruses which are not vulnerable to sulpha or antibiotics and also certain types of bacteria which are resistant. When these produce illness, they produce new types of disease strangely different from copy-book standards, to the discomfiture of the doctor used to old types. Another new and disquieting phenomenon is malignancy of the throat, the lung, the liver or of the stomach or intestine. Cancers have become ubiquitous.

As diseases have thus taken on new shapes, our diagnostic methods have multiplied beyond recognition; although we must note with regret the utter neglect of our time-honoured methods of inspection, palpation, percussion and auscultation. The newer methods are so many and so various that many of our diagnostic problems can be solved with their help alone. Thus while there were 3 tests for liver function in 1931, a battery of 12 tests of hepatic function is now commonplace. Electroencephalography, arteriography, ventriculography have cleared up many intracranial problems and made the removal of intracranial tumours far easier than before.

The portable electrocardiograph has made diagnosis of cardiac infarction at the patients home possible. Many cases of coronary occlusion would have been otherwise overlooked in the days when we had only a static electrocardiograph to which the patient could be removed only at great risk. The multiple chest leads instead of a single fourth lead which was common then have helped us often to locate the lesion precisely, though of course much remains to be done about damage in the posterior areas.

Mercurial diuretics introduced before 1931, were still too toxic compared to those of the present day which have now become one of the most important therapeutic agents in the treatment of congestive failure and general oedema. Non-mercurial oral diuretics have also appeared to complete the good work.

As has been said earlier the amoeba, in spite of much treatment and many remedies, continue to maintain its notoriety for persistence, although in addition to the old remedies of emetine and stovarsol or carbarsone, we have at our disposal the effective hydroxyquinoline derivatives and the antibiotics. They have certainly helped to brighten the life of victims of ameobic infection considerably but the protozoa are never totally vanquished.

Malaria is on the run, so is kala-azar except in some areas of Assam. Ulcerative colitis is still as refractory to treatment as in 1931, the many surgical procedures recommended only suggest the poverty of effective drugs.

In anaemia, after Minot and Murphy's classical work, the physician in 1931 had the effective help of liver extract preparations. Then came folic acid, then purified liver extract, then gradually the cobalt fraction, the synthesis of B_{12}—all recording notable advances in the treatment of anaemias. The development of preparations for large-scale injection of iron, intravenous or intramuscular, has been another milestone in progress.

Urethane, nitrogen mustard, TEM, and similar other preparations have been developed to control the leukaemias. In the treatment of anaemia no picture would be complete without mentioning blood transfusion. Daily and hourly this treatment is given for most cases which require replenishment of blood as well as in shock and numerous other conditions.

The peanut oil emulsion, introduced into the stomach marks a definite advance in the treatment for renal failure. Treatment adjusted to the amounts of sodium and potassium in the blood is another very helpful feature.

The advent of ACTH and cortisone originally for rheumatoid arthritis has upset many of our notions. The first suggestions that they might prove a cure-all for many diseases at first led to an almost Klondyke gold rush type of demand with the inevitable deep disappointment in many cases afterwards. But in certain conditions, e.g., acute rheumatic fever, or status asthmaticus, they are invaluable.

The vitamins were brought out in a wave of enthusiasm which swept many of us off our feet. Much of the foam and froth of those days has subsided but there is yet much cause for congratulating ourselves on the isolation of vitamins B_1, B_2, B_6, calcium pantothenate, on the great recuperative value of ascorbic acid, on the definite value of vitamins D_2 and D_3 for tuberculous glands, and the possible value of vitamin E in cardiac conditions etc.

ECT for schizophrenia, leucotomy for certain mental conditions have certainly helped progress considerably, as have drugs of the chlorpromazine type. The new surgical technique for operations on the heart; particularly the stretching of the mitral valve has completely transformed the favourable outlook in mitral stenosis cases.

Numerous drugs for hypertension have entered the field, the powerful ganglion blocking agents being among them, but control of hypertension seems to elude us still.

A few stray thoughts on the changes in therapeutic procedure noticed in the last 25 years are given above. By no means exhaustive they may serve however to point out how rapidly and in what directions things are changing.

PROGRESS IN PHARMACOLOGY AND THERAPEUTICS IN THE LAST TWENTY-FIVE YEARS

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In no branch of medical science progress has been so tremendous as in the field of pharmacology and therapeutics, during the last 25 years. There had been so many outstanding contributions in this field during the last decade that it can be stated without any exaggeration that such advance has not been possible in the last 200 years preceding this decade. It is, therefore, extremely difficult to report progress in these fields with any degree of precision. In the following chapters an attempt has been made to touch briefly on the outstanding highlights in our new knowledge in the domain of pharmacology and therapeutics.

Therapy of Bacterial Infections

CHEMOTHERAPEUTICS :

Sulphonamides—Prontosil was the first sulphonamide compound introduced by Domagk in 1935. Subsequently, it was shown that the simpler parent substance para-amino-sulphonamide was the real therapeutic agent. The extraordinary therapeutic achievements of sulphonamides in bacterial infections gave impetus for intense research and today there are in use no less than fifteen valuable derivatives out of the thousands prepared and studied. They are effective against gram-positive cocci, Neisseria group of organisms, Shigella species, *Bacillus anthracis, Corynebacterium diphtheriae, Vibrio cholerae, Pasteurella pestis* and others.

ANTIBIOTICS :

Penicillin, the first of the antibiotics was discovered in 1928. Its remarkable curative effect on many infections created interest for intensive research and today quite a number of antibiotic agents have been prepared from various fungi, moulds, soil bacteria, etc. of which quite a few are of great therapeutic value.

Penicillin—Gram-positive organisms are said to be specially susceptible to this antibiotic. This is effective against the gram-positive cocci, Neisseria and Clostridium groups of organisms, Treponema and Leptospira species, *Corynebacterium diphtheriae* and *Bacillus anthracis* and others. The antibacterial spectrum is, however, constantly shifting because of the development of resistant strains and therefore, sensitivity tests are important before the use of all antibiotics.

It has got the least toxic effect.

Streptomycin—In 1944 Waksman, discovered streptomycin from the broth culture of *Streptomyces griseus*. Following this, other streptomyces collected from all over the world were tested and several new and precious antibiotics like chloramphenicol, aureomycin, oxytetracycline, etc., of great therapeutic interest were discovered.

The range of action of streptomycin overlaps in some respects that of penicillin. Certain organisms not susceptible to penicillin like *H. influenzae, B. proteus, B. pyocyaneus, Esch. coli, Pasteurella pestis* are sensitive to streptomycin. The organisms that had acquired resistance to penicillin may yet be susceptible to streptomycin.

The main importance of streptomycin is for its value in the treatment of tuberculosis, in which no other antibiotic has been found to be of the same use so far. Specific neurotoxicity affecting the auditory and vestibular nerves, coupled often with development of resistant strains of tuberculosis organism, seriously threatens its use alone.

Chloramphenicol—This is the first antibiotic of real use in Rickettsias (typhus) and against some virus diseases like atypical pneumonia and lymphogranuloma. But its greatest value is in the treatment of typhoid infection against which, before its discovery, there was not available any chemotherapeutic agent.

Apart from some mild toxic effect on the gastrointestinal system, the most serious toxic manifestation of chloramphenicol refers to depression of haemopoietic functions.

Tetracyclines—Under this head we have chlortetracycline, oxytetracycline and tetracycline. These compounds owe their action to the tetracycline group and are highly effective against infection with a wide variety of gram-positive and gram-negative bacteria, including various types of bacterial meningitis. They are also very effective against rickettsial and viral infections and obviously the most effective agents against psittacosis, lymphogranuloma group of organisms,

They are also effective against most organisms acted upon by penicillin. All the venereal diseases respond well to these antibiotics. Aureomycin seems to benefit amoebic infections.

Newer antibiotics—All the antibiotics that followed penicillin and streptomycin were not destined to play a prominent role in therapeutics either because of their toxicity or because their activity has not been remarkable. Some of these antibiotics like tyrothricin, polymyxin, bacitracin, neomycin, viomycin, erythromycin, magnamycin, fumagillin, cyclosenine and others are effective against various infections.

Therapy of Virus and Rickettsial Diseases

Immunity, passive and active, has been the only means of treatment available for the virus diseases till the introduction of antibiotics, and considerable progress has been made in the field of immunology. A number of antibiotics appear to have more or less specific effects on a few virus diseases. They are the tetracycline compounds, chloramphenicol and magnamycin.

Therapy of Tuberculosis

Just a decade ago there was no specific drug for tuberculosis. The drugs suggested were cod liver oil, creosote, hypophosphites and gold. Today they have gone out of use. The introduction of streptomycin has revolutionised the management and prognosis of tuberculous diseases. Following this, several other chemotherapeutic agents effective against tuberculosis have been discovered.

Para-amino-salicylic acid—PAS is of limited value in the treatment of tuberculosis by itself. But it is deemed a valuable synergiser of streptomycin in two important directions: (1) less of streptomycin is to be given and (2) the incidence of development of streptomycin resistance is greatly reduced. PAS resistance has been reported but is rare.

Isonicotinic acid hydrazide—Isoniazid differs from other antituberculous drugs in its ability to diffuse freely into cells and exerts its full bacteriostatic effect intracellularly. High concentrations are readily reached in the cerebrospinal fluid and so useful in tuberculous meningitis. The main drawback is that tuberculous organisms develop resistance to this compound readily.

Newer antibiotics—Neomycin and viomycin, found effective agents against tuberculosis, have been claimed to reduce the incidence of streptomycin resistance. Cycloserine is now being studied.

Therapy of Leprosy

In the absence of more effective chemotherapeutic agents, until very recently chaulmoogra and hydnocarpus oil were the only available remedies in leprosy.

Some of the sulpha derivatives like sulphones and thiosemicarbazones synthesised for use in tuberculosis were tried in leprosy caused by the allied acid-fast bacillus as well with very encouraging results.

Sulphones—They include the parent diaminodiphenyl sulphone and its derivatives. The activity of these compounds is due to the parent substance. Toxic manifestations are not uncommon.

Thiosemicarbazones—These are useful in cases intolerant to sulphones. But they are more toxic.

Isoniazid and streptomycin—Limited clinical experience seems to suggest that they may be of some value as an adjunct to other antileprous remedies.

Therapy of Venereal Diseases

A most fascinating revolution has occurred in the treatment of venereal diseases by the introduction of chemotherapy. Various venereal diseases are cured by the treatment with one or the other chemotherapeutic agent.*

Therapy of Malaria

Previously very little was known about the life cycle of malarial parasites. But today, proper understanding of the life cycle of different species of malarial parasites has helped tremendously in searching for and evaluating potent antimalarial drugs having action in different stages of their development.

Before the period under review, quinine and other cinchona alkaloids which have their effect on the asexual erythrocytic phase only and pamaquine with other 8-aminoquinoline derivatives which are effective against gametocytes, were the main chemotherapeutic agents available for the treatment of malaria. A number of drugs with divergent chemical constitution are now available which are capable of acting in malaria.

Mepacrine or atebrine, the acridine derivative, was prepared in 1930. It has got suppresive action like quinine. Subsequently, 4-aminoquinoline derivatives, like chloroquin, and amiodiaquin, made their appearance. Chloroquin is said to be three times more potent as a suppressive and even as a

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* Details of treatment of venereal diseases which the author had supplied have not been included as the matter has been dealt with separately in another article elsewhere in this issue.—Ed., *J. Indian M.A.*

curative compared to quinine and mepacrine. A single large dose of amiodiaquin is said to produce an early clinical suppression with reduced relapse rate. Then came the biguanide derivatives like proguanil which have suppressive action in acute attacks of falciparum infections. It has been seen that following proguanil treatment the gametocytes become non-infective to mosquito. Pyrimethamine, a pyrimidine compound, is a new antimalarial agent which in proper single doses frees the peripheral blood of schizonts and trophozites in 48 to 72 hours. It is said to be more effective in falciparum infection. In higher doses, it has damaging action on the bone marrow and for this it has been recommended in polycythaemia vera.

Therapy of Leishmaniasis

Prior to 1930, antimony compounds, trivalent as well as pentavalent, were the available remedies against leishmaniasis. In 1939 the aromatic diamines came in the field of treatment of kala-azar. Compounds like stilbamidine and pentamidine are very effective but toxic manifestations are common. In the treatment of leishmania tropica, mepacrine is a new entrant.

Therapy of Amoebiasis

Prior to 1930, emetine, organic arsenicals, *kurchi* and chiniofonum, a halogenated oxyquinoline derivative were the drugs available for the treatment of amoebiasis. Subsequently, two new compounds of the latest series known as vioform and di-iodohydroxyquinoline, were discovered. They are very useful in intestinal amoebiasis. Then came the aminoquinoline derivatives, chloroquin and amiodiaquin which exert their action both in intestinal and hepatic amoebiasis. Emetine was the only drug effective in hepatic amoebiasis but today the drug of choice in hepatic amoebiasis is chloroquin, and liver infection resistant to emetine responds well to chloroquin.

Antibiotics like aureomycin and oxytetracycline have amoebicidal action. Infection in the gut as well as the amoebae disseminated outside the alimentary tract are amenable to aureomycin. Fumagillin, the new antibiotic, has direct lethal action on the amoeba. Penicillin and sulpha drugs are being used effectively, preliminary to amoebicidal drugs for the treatment of associated bacterial infections.

Therapy of Malignancy

It is only in the last few years that chemotherapy has gained some importance in the management of malignant diseases. In general, the solid epithelial tumours and connective tissue tumours have not responded to chemotherapy. The most satisfactory results have been obtained in neoplasms affecting the bone marrow and lymphoreticular tissues—leukaemias, Hodgkin's disease, lymphosarcoma and reticulum cell sarcoma. Chemotherapeutic agents are either antimitotic as for example, nitrogen mustard, TEM, urethane or antimetabolics like folic acid antagonists and 6-mercaptopurine.

Hormonal therapy has been found effective in malignancy of sex organs like prostate and breast. Radiotherapy has been helpful in producing at least temporary regression in malignant tumours accessible to such procedures.

Anthelmintics

There have been many new additions in the list of anthelmintics during the last 25 years. Tetrachloroethylene has been found superior to carbon tetrachloride in the treatment of hookworm infection. It is also of value in oxyuriasis. Hexylresorcinol has been found active against hookworm, ascariasis, oxyuriasis, dwarf tapeworm and whipworm. Gentian violet is the first moderately effective drug against *Strongyloid stercoralis*. This dye is also effective in the treatment of oxyuriasis. More recently diethylcarbamine has been introduced as the most effective filaricidal agent. It has also been found to be of value in onchocerciasis and in ascariasis. Miracil D has been found to be a potent agent in the treatment of schistosomiasis.

Progress in Systemic Pharmacology and Therapeutics

Nervous system:

Basal narcotics—Premedication has been resorted to in recent years in order to produce partial anaesthesia with non-volatile narcotics, the anaesthesia being completed by gas later on. The most important drugs for this are paraldehyde, morphine, bromethol and short-acting barbiturates. These are called 'basal narcotics'. The use of these drugs decreases the amount of the more powerful general anaesthetic required to complete the anaesthesia and abolishes or diminishes the untoward after-effects.

While curare and allied drugs have no hypnotic property, they can be compared to basal narcotics as premedication with these drugs results in marked relaxation of muscles and saves the amount of anaesthetics needed.

Hypnotics and sedatives—The barbiturate group of drugs was introduced as hypnotics and sedatives in the earlier part of this century. Later on, the most significant advance has been the syn-

thesis of homologous series of thiobarbiturates with distinctive pharmacological properties and special uses. These thiobarbiturates are ultra-short-acting. They are mainly used intravenously to induce general anaesthesia.

Anticonvulsants—Earlier treatment of epilepsy was done with bromides and luminal. Phenytoin soluble which has come to this field more recently, is found to be superior to any of the drugs used before. Troxidonum has been found useful in *petit mal*. Following this several chemical compounds which are useful in these conditions have been introduced.

Tranquillising agents—Certain new drugs have been introduced recently which are central depressants but with distinct properties. These new tranquillising agents apparently act on the subcortical region, perhaps the region of hypothalamus. There is not much narcotic and hypnotic effect but hypothalamic activity, particularly the autonomic nervous system, is depressed. Subconscious psychic disturbances, vasomotor tone, thermal constancy and voluntary muscular co-ordination are said to be mainly affected by these agents. They are useful in calming the agitation of elderly senile arteriosclerotic patients. This effect has also been utilised in the withdrawal of narcotics and barbiturates.

The most prominent members of this group are Rauwolfia and chlorpromazine.

AUTONOMIC NERVOUS SYSTEM :

The concept of chemical mediation of nerve impulses has profoundly affected our knowledge of the mechanism and the site of action of the drugs affecting the autonomic nervous system. The understanding of structural relationship of chemical compounds with their pharmacological activities has helped a great deal in the search for and evaluation of newer remedies.

Sympathomimetics—Generally speaking two important and essential portions of the molecules concerned in the physiological activity of sympathomimetic drugs are : firstly, the aromatic moiety which may be either benzene, monohydroxybenzene or dihydroxybenzene ; secondly, an aliphatic moiety with two or three carbon atom chains. Several new drugs of this group like amphetamine, methamphetamine, nor-adrenaline, isoprenaline and others have been added to the list of sympathomimetics in the last 25 years. It has been recently shown that the sympathetic chemical transmitter is nor-adrenaline which has got some pharmacological properties distinct from adrenaline.

Recent research has shown that sympathomimetic action can reside in other chemical structures too. This type of drugs like naphazoline, cyclopentamine, tuaminoheptane and others have been introduced specially for local vasoconstriction in nasal mucosal turgescence and for other sympathomimetic effects.

Sympathetic blocking agents—Antagonists of adrenaline are fewer and less definite in their actions than the corresponding antagonist of acetylcholine. At present they are used in vasospastic diseases, in tachycardia and for diagnosis of pheochromocytoma. To this type of drugs belong piperoxan hydrochloride, tolazoline hydrochloride, etc.

Ganglion-blocking agents—Recent additions to this group are the pentamethonium and hexamethonium compounds which affect both the sympathetic and the parasympathetic ganglia, and pentapyrrolidinium which blocks the sympathetic ganglia more intensely. These drugs are used in hypertension. Side-effects are, however, common.

Curariform drugs—This group of drugs are not only ganglion blocking agents but their more predominant action is to induce complete relaxation of skeletal muscles. So they have been used to decrease the spasticity of tetanus and parkinsonism and as an adjunct to general anaesthesia and laryngoscopy. Several synthetic curariform drugs like decamethonium compounds, succinylcholine chloride and benzoquinonium have recently been introduced.

Atropine substitutes—The aim in attempting to produce atropine substitutes has been either to get quick and shorter duration of action or to have a single desired action of atropine to the exclusion of others. They are being used mainly to relieve spasm of the gastrointestinal and urinary tracts and in dysmenorrhoea. They are also used as an adjunct to the treatment of peptic ulcer. Some of the recently introduced atropine substitutes are methantheline and oxyphenonium bromides and eucatropine.

CARDIOVASCULAR SYSTEM :

Drugs acting on the heart—Introduction of some new remedies for cardiac arrhythmias has been the notable recent advance in this field. Procaine-amide has been noted to exert cardiac actions similar to those of quinidine. It has been found useful for the treatment of ventricular and auricular arrhythmias.

Mepacrine, another antimalarial, has recently been used successfully in the treatment of auricular fibrillation, particularly of recent origin. It is a more rapidly acting drug than quinidine. In auricular fibrillation where mepacrine was ineffective, quinidine and digitalis were also found to be ineffective.

Vasodilators and antihypertensive agents—Vasodilatation is required clinically in several conditions of vascular spasms which may be general, leading to hypertension, or local, affecting the coronary vessel or some peripheral vessel. Vasodilatation may be brought about by several agents through different mechanisms of action.

The treatment of hypertension has been as elusive as its aetiology. Whatever may be the causative factor, the ideal therapy at present is aimed at reducing the blood pressure to reasonable levels without curtailing the blood supply to vital organs.

Since the isolation of a number of active alkaloids of *Rauwolfia serpentina* in 1931 and the demonstration of their effects on the cardiovascular system, they are currently being used as antihypertensive agents.

Hydrogenated ergot alkaloids and hydralazine hydrochloride have been recently introduced in therapy of hypertensive diseases. Good results have been obtained in uncomplicated essential hypertension. It is supposed that they have got adrenolytic action. The veratrum alkaloids have been introduced in the therapy of hypertension in 1950. They are claimed to produce marked and sustained fall in blood pressure with minimum toxic effects.

The efficacy of ganglion blocking and sympathetic blocking agents as hypotensives have already been mentioned.

Coronary dilators—The xanthine derivative like aminophylline has got direct vasodilator action on the coronary vessels and has recently been used for anginal attacks and in acute shock stage of coronary occlusion.

Papaverine, a morphine alkaloid, and its synthetic analogues have been noted to dilate coronary vessels and to lower the blood pressure. Papaverine has been found useful in the treatment of acute infarction of the heart but its hypotensive effect is a contraindication in a patient with an already low blood pressure. Khellin relaxes the plain muscle tissue including that of coronary vessels and has been found effective in coronary spasms. More clinical trials are necessary for proper evaluation of this drug.

Peripheral vascular dilators—Sympathetic blocking agents and other hypotensive drugs acting peripherally, have been used for vasodilatation in diseases like Buerger's disease, thromboangiitis obliterans etc. Histamine and glycine have sometimes been used in these conditions.

BLOOD:

Coagulants—With the discovery of various new factors concerned in the process of blood coagulation and with better understanding of the mechanism involved, various new agents have been introduced in the therapeutics as coagulants. Some of the newly introduced substances are fibrin, gelfoam, oxidised cellulose, thrombin, thromboplastin, vitamin K, antihaemophilic globulin, methylxanthine, etc.

Anticoagulants—The aim of treatment with anticoagulant drugs is to prevent the formation and growth of intravascular clots. Newly introduced anticoagulants are heparin, dicumarol, ethyl biscoumacetate, phenyl-indonedione etc.

Plasma substitutes—For restoring the blood volume in circulatory failures of peripheral origin and for other purposes various plasma substitutes have been introduced in therapeutics. They are polymerised carbohydrates like pectin ; protein substitutes like gelatin ; plastics like methylcellulose ; blood derivatives like albumin and modified globin, haemoglobulin etc.

Hematinics—Microcytic hypochromic anaemia : Recent progress made in this field is the introduction of parenteral administration of iron. Intravenous saccharated iron oxide was used with satisfactory results. Now a less hazardous form dextran-iron solution has been introduced for intramuscular use. The advantage of parenteral administration is that it is very quick acting and specially valuable in those who cannot tolerate or absorb iron when given orally.

Macrocytic hyperchromic anaemia : Efficacy of liver therapy in megaloblastic anaemia was recognised earlier. With the increasing knowledge, however, it became clear that liver contained more than one substance, each or all of which may be necessary for supplying the deficiency in different types of megaloblastic anaemia. This belief was eventually confirmed by the synthesis of folic acid (1945) and vitamin B_{12} (1948). The anti-anaemic properties of liver itself, as well as of crude extracts can be attributed to both folic acid and vitamin B_{12}, whereas refined liver extracts owe their activity to vitamin B_{12} alone. Addisonian anaemia, including the neurological complications, is now known to be due essentially to a deficiency of vitamin B_{12}, whereas most if not all of the other megaboblastic anaemias are due to deficiency of both folic acid and vitamin B_{12} or in some cases, of folic acid alone. Folic acid fails to prevent or cure the neurological complications of Addisionian anaemia though it improves the blood picture.

Folinic acid—This new factor, much more potent than folic acid, is thought to be the active principle to which folic acid owes its anti-anaemic action.

Thymine—This is a constituent of nucleic acid in all living cells. It has been used in pernicious anaemia with good haematological response.

RESPIRATORY SYSTEM :

The main advances made under this heading is in the treatment of bronchial asthma. Apart from the older remedies like adrenaline, pituitrin, atropine, stramonium and nitrites, there have been some new additions to the remedies against bronchial asthma.

Isoprenaline is a new synthetic adrenaline substitute with a predominant bronchodilator action. Aminophylline has been recommended intravenouly in status asthmaticus. Theophylline and papaverine, though theoretical depressants of smooth muscles are not much in use in bronchial asthma.

Recently two new groups of drugs have gained importance. These are antihistaminics and hormones like ACTH and adrenocorticoids. Since asthma is an allergic disorder with evidence of histamine release, it is expected that antihistaminic drugs would do some good in this disease. but the clinical use of antihistaminics in allergic asthma has not given satisfactory results. A fair number of reports have come during the past few years that ACTH and adrenocortical hormone relieve asthma, particularly the dreaded condition of status asthmaticus.

URINARY SYSTEM :

Diuretics—The main contribution in this field in the last 25 years is the introduction of some new diuretic agents. The mercurials and xanthine derivatives were known much earlier as diuretic agents. But it is relatively a recent observation that the combination of these two substances produces better effect. Many such compounds have been introduced in therapeutics today.

A new approach to research on diuresis resulted in the synthesis of acetazoleamide a sulpha derivative which acts by inhibiting the enzyme carbonic anhydrase of the kidney. It is administered orally and a suitable single dose may cause considerable diuresis along with the excretion of Na, K and bicarbonates. Simultaneous treatment with mercurials and acetazoleamide have a mutual potentiating effect and the action of one corrects the distortion in the acid-base balance caused by the other.

Urinary antiseptics—With the availability of sulpha drugs and antibiotics, the previous remedies like mandelic acid, hexamine, permanganate, protargol, acriflavine, methylene blue, etc., have mostly gone out of use. Among the antibiotics, streptomycin, penicillin, aureomycin, oxytetracycline are now the drugs of choice in various infections of the urinary tract depending upon the susceptibility of the organism.

ANTIHISTAMINICS

The striking similarity between anaphylactic shock and allergic manifestations on the one hand and response to histamine on the other, revealed the role of histamine in allergy. Earlier efforts to treat allergy were directed in various directions like attempting to neutralise histamine, to build up immune substances against histamine, to stabilise the cellular elements of the body and thereby preventing their becoming target organs for allergy. But all proved disappointing.

Finally came the antihistaminic compounds, or the anti-allergy drugs in 1933. They act by successfully competing with histamine for the cell receptors of the target organ and thus displacing or replacing histamine from its attachment to cells. As the underlying condition responsible for abnormal histamine release is not interfered with, they may have to be continued indefinitely or till the allergic tendency has subsided spontaneously or as a result of desensitisation.

VITAMINS

THE WATER-SOLUBLE VITAMINS :

Vitamin B-Complex—Beginning with the isolation of riboflavin by Kuhn in 1933, within ten years there followed in rapid succession the recognition and chemical identification of thiamine, nicotinic acid, pyridoxine, choline, pantothenic acid, biotin and inositol. PABA was identified as a possible related factor in 1942, and folic acid was added in 1946. Vitamin B_{12} and folinic acid, the most recent members of this group, were identified in 1948 and 1950 respectively and have already assumed a position of enormous importance in a variety of physiological processes.

Vitamin C—Although the physiological role played in the body by vitamin C and its deficiency diseases were known for centuries the isolation and synthesis of this vitamin were done only in 1932 and afterwards.

THE FAT-SOLUBLE VITAMINS :

Vitamin K—It is a recent addition to this group. In the course of isolation, characterisation and synthesis of vitamin K, prothrombin was identified as an important factor in the process of coagulation of blood. This vitamin is synthesised by the bacteria in the gut and promotes formation of prothrombin in the liver.

HORMONES

Tremendous advances have been made in the field of hormone research in the last 25 years.

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Many hormones have been identified and isolated in more or less pure forms and many have been synthesised and their physiological properties studied. The FSH, ICSH, luteotrophin and growth hormone of the pituitary have been isolated. Pregnant mare's serum, human chorionic gonadotrophin have been isolated. The former is found to have high FSH-like activity while the latter exhibits typical activity of ICSH and luteotrophin. Adrenocorticotrophic hormone has been isolated from pituitary in 1943. Thyrotrophic hormone has also been isolated in a relatively pure form.

Isolation of crystalline oestrogen and progesterone has been done. Synthesis of various forms of oestrogens and testosterone has been possible within the period under review. Progesterone has also been synthesised.

Though insulin was first crystallised in 1926, other derivatives of insulin—like protamine insulin, protamin-zinc-insulin, globulin-zinc-insulin—which have got prolonged duration of action have been introduced recently.

The first adrenocortical steroid to be prepared in 1937 was 11-desoxycorticosterone. Cortisone and hydrocortisone were synthesised in 1950.

Therapeutic application of adrenocortical steroids and ACTH—They have been used in various endocrinopathies either as replacement therapy or for diagnostic purposes. They have been found useful in collagen diseases like rheumatoid arthritis, rheumatic fever and rheumatic carditis, lupus erythematosus, peri-arteritis nodosa, dermatomyositis etc.; in allergic diseases like bronchial asthma, angioneurotic oedema, allergic vasomotor rhinitis, drug hypersensitivity, etc.; in inflammatory diseases of the eye ; in diseases of the skin like pemphigus, psoriasis, etc.; and in various other conditions.

Antithyroid drugs—Antithyroid drugs like methamazole, methyl thiouracil and propyl thiouracil are being used since 1943 in the treatment of hyperthyroidism and in the preoperative preparation of the patient who is soon to undergo thyroid surgery.

Medicaments Viewed from Queer Angles

THE REMEDY THAT WAS 'WRONG'

Very early in my professional life the following incident was described in my hearing. One farmer, giving details connected with a domestic tragedy, spoke somewhat as follows: "Ye ken we leeve a lang way frae a doctor; so one day when I was in Glasgow, I wasna feeling verra weel, so I thocht I wad gang and see a doctor, and tell him what was wrang wi' me. He telt me he would soon put that right; and gave me a pouther (powder) which he telt me to mix in a wineglassfu' o' water, and take it just before going to bed. But when I got hame, I was feeling a guid deal better, so I didna tak the pouther, but put it into a drawer. Aboot three weeks after, the wife wasna feeling verra weel; and ye ken we leeve a lang way frae a doctor, so I just thocht o' that pouther, and went and took it oot o' the drawer, and mixed it in a wineglassfu' o' water, as the doctor telt me, and gave it to the wife; and, man wad ye believe it?—she hadna taken that pouther verra lang before she died. Wasn't it a real blessing I didna tak that pouther masel?"—Robert Bell (1845-1926)

THE REMEDY THAT MAY BE 'RIGHT'

A belief that medicine to be effectual should be odious is a primitive faith common to all peoples. The Chinaman holds to it still, and even in the enlightened West it has not yet died away. A patient at a metropolitan hospital goes away best satisfied when he is given something to drink out of a bottle. The drinking, according to ancient ritual, must not be less often than three times a day, and the ceremony must have some reference to meals. The draught to be efficient should be coloured. It must have a marked odour, so that he may invite his friends to smell it. It should be loathsome to the taste, so that the taking of it may call for some heroism. Above all, it needs to possess an evil-looking sediment which will require a formal shaking of the phial. The Chinaman who is sick will appreciate all this and think well of it. He will intensify every detail of nastiness in the compound, so that the potion, when it reaches him, is too impossible to be thrown even to the dogs.—Sir Frederick Treves (1853-1923).

BACTERIOLOGY STRIDES AHEAD

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Born hardly hundred years back, bacteriology has made triumphant progress. It has not only developed itself as a full-fledged science, but has also given rise to several branches, such as immunology with its sub-branch immuno-chemistry, serology, mycology, fermentation chemistry, microbiological assays, etc., each one claiming for itself a separate entity among the sciences. It has not only contributed to profound advances in knowledge, but has also helped elimination of almost all of the devastating epidemics of bacterial infections from those countries which have cared to use the existing knowledge with profit.

It is perhaps in the application of bacteriology for the prevention of epidemics, and in the discovery of bactericidal drugs, that the advances have been more conspicuous and immensely contributory to the alleviation of human suffering. The discovery of several different varieties of vaccines and toxoids which have been used successfully to protect millions and millions of men against scourging epidemics of bacterial infection and intoxication, of antitoxins, antivenenes, which still continue to be the only remedy against the lethal effects of toxins and venoms, of the chain of antibiotics and sulpha drugs which can cure a large variety of bacterial infections, are some of the important contributions which make bacteriology feel proud of its own devout followers.

It is common knowledge what an enormous extent of alleviation of human suffering has been achieved with such immunising agents as Jenner's cow-pox vaccine, Pasteur's antirabic vaccine, and Max Theiler's yellow fever vaccine. Added to this list of antiviral vaccines could now be added the new Salk vaccine against poliomyelitis. Toxoids, specially the tetanus and diphtheria toxoids, have proved their worth in mass immunisation campaigns against tetanus and diphtheria. Von Behring's discovery of antitoxins and Calmette's antivenene have saved a very considerable number of lives. Even the bacterial vaccines of disputed worth, have undoubtedly been immensely useful for saving human lives.

Four different bacterial vaccines have been extensively used for prophylaxis against the respective infections. These are plague, cholera, typhoid, and pertussis vaccines. Plague has almost completely withdrawn itself from the field of mass killing. The other three infections still rage furiously in certain countries and in certain times. The question of the preventive value of the respective prophylactic vaccines has therefore been a matter of worry to many. Recently, the Expert Committee on Biological Standardisation of the World Health Organisation have reviewed the present position regarding these three vaccines. About cholera vaccine, they have said; "The overwhelming majority of workers concede that in cholera vaccine we have a valuable preventive weapon against cholera" (W.H.O., 1956). Indeed, the results of a very large number of field investigations have indicated that cholera vaccine offers between 2-fold to 25-fold protection against cholera. Yet, there is no doubt that much more is still left to be done to improve the immunogenicity of the vaccine and to evolve a laboratory test for assaying its potency.

It has, however, been recently possible not only to compare two different typhoid vaccines between each other, but also to decide whether the currently employed laboratory assays validly estimate the prophylactic value of typhoid vaccines in man. The recent field trial in Yugoslavia (W.H.O., 1955 and 1956) presented this rare and highly desirable opportunity. The Osijek field trial indicated that the phenolised typhoid vaccine undoubtedly offered some protection against typhoid fever. The alcoholised vaccine, however, did not show anywhere near the same degree of protection. The laboratory assays on the same two vaccines, on the other hand, had suggested that the alcoholised vaccine is superior to the phenolised vaccine. Since only the latter could be shown to protect against typhoid fever nothing definite can be concluded about the value of any of the laboratory methods of assay.

In case of pertussis vaccine, a correlation between laboratory estimates of the potency of pertussis vaccines and their efficacy in preventing whooping cough in children has been established, by the Whooping Cough Immunisation Committee of the Medical Research Council (1956). Thus, a sound basis for the standardisation of pertussis vaccine has been finally created. It has been made possible only by the very extensive pro-

gramme of investigation envisaged for this purpose. The standardisation of cholera and typhoid vaccine would have to wait such extensive investigations.

In the background of all these life-saving discoveries lies the effort of several eminent bacteriologists, whose discovery of the causative organisms, or evolution of methods has been immensely contributive to these discoveries. To illustrate this point with a recent example, it may be mentioned that the discovery of Salk poliomyelitis vaccine was made possible by the effort for which Enders, Robbins and Weller of Boston were recently awarded the Nobel Prize in medicine. Enders and his colleagues selected human embyonic tissue for their tissue culture preparations, added a small amount of phenol red to show whether normal metabolism of the cells was being interfered with, and incubated the inoculated virus for long periods such as twelve to twenty days. It was thus they discovered that poliomyelitis virus could be grown in non-nervous tissues. Kidneys removed at operation from young children were found to be satisfactory for growth of poliomyelitis virus. Later monkey kidneys were also found to be equally suitable. Putting the tissue in tubes which were continuously rolled made it possible for the cells growing in these tissue cultures to be covered part of the time by the nutrient fluid and part of the time by air. This alternate supply of nutrition and air encouraged proliferation of the cells to a much greater extent than usual. Though Salk vaccine has not yet received uniform approbation (Ramon, 1956), yet the contribution of Enders and his colleagues has been appreciated by all.

Von Behring's discovery of the first antitoxin gave rise to a very important branch of bacteriology, called immunology, and, supplemented by Landsteiner's discovery of blood groups, created the sub-branch—serology. It is common knowledge how very much useful the antitoxin and the antivenene have proved to be for alleviation of human suffering, and how indispensable is the procedure of grouping of blood for the life saving operation of blood transfusion. The serological tests for diagnosis of diseases have been none the less useful. The utility of such serological tests for diagnosis as the Wassermann, Kahn, Widal, Weil-Felix, etc., is well known.

The newer immunological product, gamma globulin, has made possible the control of at least two of the important viral diseases—measles and infective hepatitis, and perhaps also partly a third—poliomyelitis. The discovery of this product had been made possible through evolution by Tiselius of his electrophoresis apparatus. Later it had been possible to separate human plasma into five main fractions by precipitation with ethanol at controlled temperature, pH, and ionic strength. Gamma globulin is one of these components, and shows protective power against several viral and bacterial infections and intoxications.

Equally life-saving as the vaccines and the sera are the sulpha drugs and the antibiotics. Since Ehrlich had laid the foundation of chemotherapy, Domagk's discovery of prontosil had been a landmark. Since then a host of sulpha drugs have been discovered and used for saving millions of human lives.

The discovery of penicillin by Fleming, and its preparation for internal use by Florey, Chain, and others, set rolling the chain of discovery of many other useful antibiotics. Streptomycin, chloramphenicol, tetracycline, oxytetracycline, chlortetracycline, erythromycin, polymyxin B, are now almost household names. Newer antibiotics are still in the course of successful development. Some of these are neomycin, novobiocin, mystatin, carbomycin, spiromycin and albomycin.

Neomycin from *Str. fradiae* is bactericidal against gram-positive bacteria. Resistant forms do not appear to develop readily. Oral use may be good for the treatment of infantile gastroenteritis. Novobiocin from *Str. niveus* is active against penicillin-resistant staphylococci. Mystatin from *Str. noursei* is active against fungi. Carbomycin and spiromycin are two broad-spectrum antibiotics with activities generally similar to those of erythromycin. Albomycin is a Russian discovery, and has been found to be useful.

There is yet much truth to find, many puzzles to solve. With the availability of varieties of precision tools, of such tracer elements as radioactive isotopes, and of co-operation of allied scientists, it is certainly not too much to expect that the progress of bacteriology during the next hundred years would be as outstanding as it has been during the first hundred years of its existence, especially in the last quarter of a century.

Science and Nationality

Science has no nationality because knowledge is the patrimony of humanity, the torch which gives light to the world. Science should be the highest personification of nationality because, of all the nations, that one will always be foremost which shall be first to progress by the labours of thought and of intelligence.

Let us therefore strive in the pacific field of Science for the pre-eminence of our several countries. Let us strive, for strife is effort, strife is life when progress is the goal.—Louis Pasteur (1822-1895)

PROGRESS IN THE CURE AND CONTROL OF VENEREAL DISEASES

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If we look back twenty-five years, we find that most of the acute and some of the chronic diseases caused by microorganisms exacted a heavy toll in terms of morbidity and mortality among human beings. The physicians and the public health workers were helpless in the face of a wide variety of infectious diseases although improved sanitation, better nutrition and raised socio-economic standards in some countries of the world, have contributed significantly to mitigate the ravages of infectious diseases among the population.

It is common knowledge that the discovery of sulphonamides in the mid-thirties heralded for the first time the possibility of successful chemotherapy against bacterial and coccal infections. Within a decade of the introduction and widespread use of the various sulpha drugs, it became increasingly evident that many of the common pathogenic organisms were becoming resistant to this therapy, not to speak of the increasing incidence of toxic side-reactions to these drugs, often of a severe, sometimes fatal type. The discovery of the first antibiotic drug, the result of careful observation of a fortunate accident in a bacteriological laboratory just coincided with this period when the sulphonamide resisters were threatening to perpetuate themselves and secure a fresh lease of pathogenic existence in human tissues.

Antibiotics in Venereal Diseases and Treponematosis

The advent of antibiotics has wrought a revolutionary change in the treatment and control of a group of infectious diseases known by the name of venereal diseases. There are five diseases in the group and curiously enough six antibiotics—penicillin, streptomycin, chloramphenicol, tetracyclines, erythromycin and carbomycin—have proved therapeutically effective in the cure of these diseases, either individually or in combination. The present status of antibiotics in the treatment and control of venereal diseases is briefly discussed.

Syphilis

Penicillin :

Extensive organised experimental and long-range clinical investigations as to the effectiveness of penicillin in the treatment of syphilis and other forms of treponematosis have been carried out during the past decade in some of the countries of the West in which the United States took the leading part and has accumulated an enormous amount of knowledge, both fundamental and practical. Penicillin has been proved to be curative in the two major diseases of the venereal group, viz., syphilis and gonorrhoea and is the drug of choice. Ehrlich's dream of a single massive sterilising dose of a non-toxic drug has been achieved in the one-injection treatment of syphilis and other treponematoses, yaws, bejel and pinta, with penicillin. For the first time in the history of communicable diseases, the concept of chemotherapeutic control of endemic syphilis, yaws and other treponemal affections, affecting large segments of the population has become a distinct possibility for practical realisation with the use of penicillin, as witnessed in the successful mass treponematosis programmes conducted by WHO in different parts of the world in the last few years. Penicillin is curative in early symptomatic syphilis, both acquired and congenital ; is preventive of prenatal syphilis ; abortive during the incubation period of the disease ; and prophylactic before exposure to contagion.

Clinical and experimental studies have established the time-dose relationship for optimum therapeutic effect. *Treponema pallidum* is one of the most penicillin-sensitive organisms ; even as little as 0·0025 units in a millilitre, immobilising 50 per cent of the organisms in 16 hours. In view of the slow multiplication of the *Treponema pallidum*, about 30 hours, it would be necessary for optimum therapeutic effect that the duration of exposure of the organisms to penicillin should be for a longer period which may vary from 7 to 14 days depending upon the stage of the disease.

A penicillinaemia of 0·03 unit of penicillin per ml. of serum acting over a period of 7 to 14 days is considered the minimum for the treatment of syphilis and other treponematoses. This objective of prolonged continuous low concentration of penicillin in the blood is attained by the use of repository penicillin. The preparation in current usage is procaine penicillin in oil with 2 per cent aluminium monostearate. Repository penicillin preparations have made it possible to treat the syphilitic adequately on an ambulant basis and the treatment is applicable in the individual case and in large population groups. The recent advent of the benzyl amine penicillin salts in aqueous sus-

pension and in smaller doses, has even a more marked repository effect than PAM. Another advantage of the repository penicillin preparations is that treatment can be given as a single large dose or as several individual doses at adjusted time intervals to suit the convenience of the patient and the physician, without sacrificing the effective therapeutic penicillinaemia and the duration of the concentration of the drug in blood and tissues. To secure good therapeutic effect the need for certain international minimum requirements which PAM preparations on the market should satisfy, was considered by the Expert Committee of the WHO who set up an international standard. The essential requirement is that a test dose of 300,000 units of PAM injected intramuscularly into ten healthy adults doing normal ambulant work shall result in a penicillinaemia of not less than 0·03 unit per ml. of serum for a minimum of 72 hours in the majority of them.

The accepted route of administration of the drug is intramuscular. Oral or intravenous methods are not recommended in the treatment of syphilis as the former route is uneconomical and unreliable, and the latter unsuitable and unsafe.

Schedules of recommended treatment—The most impressive results of penicillin therapy have been achieved in (1) early syphilis which includes primary, secondary and early latent stages, (2) in the prevention of prenatal syphilis, and (3) in early congenital infection. In the earlier years of penicillin therapy of syphilis, there had been certain doubts and misgivings among the physicians and syphilologists of Continental Europe whether penicillin alone in the therapy of the three categories of syphilis listed above would achieve permanent cure, clinically and serologically and if it was not desirable to combine penicillin with metal chemotherapy arsenic and/or bismuth. The long-term results of the "Blue Star" study of the United States Public Health Service of the treatment of a specially selected group of 1,570 patients with primary, secondary and early latent stages of syphilis, and follow-up over a six-year period tend to show that the cure of syphilis is not enhanced by the addition of arsenic and bismuth. Sero-negativity rates at the sixth post-treatment year were 81 per cent for patients given combined penicillin-arsenic-bismuth therapy, and 80·7 per cent for those treated with penicillin alone, while retreatment rates were 17·4 per cent and 16·3 per cent respectively.

In our country, there have been no such organised long-range evaluation studies of penicillin therapy of syphilis except in the Army where a central syphilis registry was set up in 1948 to control, co-ordinate and assess the treatment of syphilis in all the V.D. treatment centres of the Armed Forces of the Union. The evaluation studies of the treatment results, on 21,000 cases of syphilis, during a period of eight years is remarkable. The treated patients were under regular periodic clinical and serological surveillance for a period of thirty months from the date of start of treatment. Obsessed with the unfavourable and contradictory reports of 10 to 20 per cent failure rate from treatment with penicillin alone during the formative years of the penicillin era in syphilis, the sponsors of the Army evaluation studies rightly and conservatively took the view that a combined concurrent treatment with penicillin and bismuth should be the routine procedure in the treatment of syphilis in its various phases. The schedule consists of 4·8 mega-units of penicillin with weekly injections of bismuth for ten weeks totalling 2 g. of bismuth. The advantage of the combined treatment, penicillin-*cum*-bismuth in the Indian Army study extending over ten weeks is seen in a reported cure rate of 99·2 per cent in primary syphilis and 88·1 per cent in secondary syphilis at the end of thirty months, whereas in the Blue Star Study a cure rate of 96·5 per cent in primary and 94·2 per cent in secondary syphilis was achieved with penicillin alone in cases observed over a longer period of time (six years).

It is the opinion of workers in the field including our own observations that since the advent of penicillin therapy of syphilis there has been a significant increase in the incidence of reinfection. Among retreated cases 65 to 75 per cent of the cases are reinfections and not relapses. Penicillin by its rapid treponemicidal action cures the patient quickly and prevents the development of immunity rendering the patient susceptible to reinfection should he expose himself again. This type of reinfections among married partners known as "ping pong" syphilis has been a distinct and disturbing feature of penicillin therapy.

The schedules of treatment which are therapeutically effective are as follows:

STAGE OF SYPHILIS	TOTAL DOSAGE
Early syphilis (primary and secondary).	4·8 mega-units of PAM or 2·4 benzyl amine penicillin in single or divided doses.
Syphilis in pregnancy for prevention of prenatal syphilis.	4·8 to 6 mega-units of penicillin spread over a period of 8 to 12 days.
Early congenital syphilis.	150,000 to 300,000 units daily for 8 days.
Early latent syphilis.	Same dosage as for early symptomatic syphilis.

It is the opinion of the WHO Expert Committee on Venereal Infections, that neither the clinical nor the serological results will improve in the individual patient by the use of higher doses than 4·8—6 mega-units of PAM in the treatment of early syphilis and syphilis in pregnancy.

In latent syphilis, the dosage of penicillin recommended is 6 mega-units divided into single doses of 600,000 units daily or on alternate days. As there are fewer treponemes in late latent syphilis, the therapeutic results of penicillin therapy are expected to be better than in early syphilis. The value of penicillin in late latent syphilis is primarily a preventive one against the development of symptomatic syphilis later in life as clinical experience and observation of untreated latent syphilitics indicate that nearly 25 per cent may develop serious destructive lesions of the skin, bone, and the cardiovascular and central nervous systems. The serology is not significantly influenced by treatment of this type of syphilis and seroresistance is the rule rather than the exception and is not necessarily an indication of an active syphilitic process.

The results of penicillin therapy of late benign syphilis affecting skin and bones are satisfactory, although healing of destructive lesions may take weeks or months. The results of penicillin therapy are difficult to evaluate in cardiovascular syphilis. The progress of the disease can be arrested but the damaged tissues cannot be repaired. The early stage of uncomplicated aortitis is rarely diagnosed and in complicated cases with aneurysm, aortic incompetence or coronary insufficiency, life may be prolonged for a few more years by treatment. Every patient with cardiovascular syphilis should receive the benefit of penicillin therapy spread out over a period of three to four weeks. A minimum of 10 mega-units of PAM is an acceptable dosage and may be repeated if necessary.

Penicillin is uniformly effective in rendering the spinal fluid negative in all forms of neurosyphilis. It is the consensus of opinion among syphilologists that penicillin alone should be the treatment of choice in asymptomatic neurosyphilis, syphilitic meningitis and neurosyphilis with only pupillary changes. In late parenchymatous neurosyphilis there has been no unanimity of opinion, whether the therapeutic efficacy of penicillin alone is comparable to that of penicillin plus malarial therapy. Without completely denying the validity of the Dattner Thomas concept that the reversal of the cytology and chemistry of the spinal fluid after treatment of the neurosyphilitic should be the criterion for evaluating treatment results, we are of opinion that from the point of view of the individual patient, the social implications of the disease and the mental satisfaction of the physician, the degree of clinical improvement after treatment should be considered of equal importance in assessing the outcome of any treatment procedure. Penicillin plus malarial therapy has given better results clinically and serologically than penicillin alone. In a chronic destructive disease such as paresis, penicillin destroys the spirochetes and prevents further progress of the disease, but has no effect on the defence mechanisms of the host, while malaria will supplement and augment the immunity of the body by its stimulation of the reticulo-endothelial system and the stress effect on the pituitary-adrenal hormonal axis. The dosage schedule of penicillin should be individualised according to the type and stage of neurosyphilis. A minimum of 6 to 10 mega-units of PAM in one long course or in two divided courses is recommended, with periodic checking of the spinal fluid during the post-observation period. Malarial therapy may be given concurrently.

It is in the prevention of prenatal syphilis that penicillin has had its spectacular triumphs. Syphilis is one of the great destroyers of child life and four of five children born to a syphilitic mother are born dead or diseased. Penicillin administered to the syphilitic pregnant woman prevents the transmission of infection from the mother to the foetus and also cures the disease of the foetus if infection has already taken place. Organised studies in America and our own on the outcome of pregnancy after penicillin therapy show that 95—98 per cent of children born have escaped syphilis and remained healthy during a postnatal observation period of six months to one year without showing any clinical or serological evidence of congenital infection. The dosage schedule recommended is 4·8—6 mega-units of PAM administered in divided doses for a period of 8 to 12 days. Equally satisfactory results have been achieved in the penicillin therapy of early congenital syphilis of infants. 150,000—300,000 units of PAM should be given daily for a period of eight days. The results of penicillin treatment of late congenital syphilis such as ocular and ear affections are equivocal.

While the incidence of primary and secondary syphilis has registered a precipitous decline it is disturbing to find that the incidence of latent syphilis has shown an upward trend during the last eight years as reported by the U.S. Public Health Service and Armed Forces, India. The

second disturbing feature is the increasing incidence of penicillin sensitisation reaction, frequently severe and sometimes fatal. In the earlier years of penicillin therapy, the reactions were few and of a minor character, but with the widespread and indiscriminate use of penicillin for conditions from a common cold to cancer, an increasing segment of the population is getting sensitised to the drug and within the last few years there has been a change in the pattern of sensitisation from the delayed serum sickness type to the more serious immediate anaphylactic shock.

BROAD-SPECTRUM ANTIBIOTICS :

Individual favourable reports of short-term evaluations of a small number of cases of syphilis treated with one or the other broad-spectrum antibiotics, have been appearing in American medical literature. It is too early to assess the permanent curative value of these drugs. Further, the current prohibitive cost of the antibiotics will be a deterrent against their large-scale use in syphilis. The manufacturers have wisely refrained from claiming either equality with or superiority to penicillin in the treatment of syphilis. Oral administration is to be preferred to other routes. Gastro-intestinal reactions are common. Hospitalisation is necessary to ensure that the patient is taking the drug as per schedule. The recommended dosage consists of 500 mg. 6 hourly by the clock for twelve days totalling 24 g., which at the current price may cost Rs. 200 per patient.

Gonorrhoea

Alone, among the group of venereal diseases, gonococcal infection of either sex is rapidly susceptible to the action of all the antibiotics administered in small doses over a period of a few hours to one or two days. The one exception to this observation is the insusceptibility of the gonococcus to the latest of the group, carbomycin. Repository penicillin in a single injection of 150,000 to 300,000 units has been found superior to the others in the rapidity of cure and the low cost of the drug and it still holds the field as the routine drug of choice in the treatment of gonorrhoea. In penicillin-sensitive patients, one or the other of the antibiotics may be used. Clinical trials of parenteral chloramphenicol and oral tetracycline in acute Neisserian infections of either sex, have been very satisfactory with an almost 100 per cent cure rate. The dose of intramuscular chloramphenicol is 1 g. suspended in 2 c.c. of distilled water which causes practically no pain or discomfort. The curative dose of oral tetracycline is 1 to 2 g., given in a single or in divided doses.

The suppressive effect of the broad-spectrum antibiotics in patients who are treated for non-syphilitic venereal infections and who may have acquired a concommitant syphilitic infection should always be kept in mind. The dosage of the antibiotics adequate for the cure of gonorrhoea and other minor venereal affections will be grossly inadequate as abortive treatment for a syphilitic infection in the incubation period. When giving penicillin in the routine treatment of gonorrhoea, it is the accepted practice to give a larger dose of 600,000—900,000 units of PAM in a single session to cure the Neisserian infection and to abort any concomitant syphilitic infection which the patient may be incubating.

Chancroids

Streptomycin, erythromycin and the broad-spectrum antibiotics have been reported therapeutically effective in the cure of chancroids. The recommended dosage is 4 to 6 g. in divided doses for a period of 4 to 6 days. As these drugs are costly, the cheapest brand of the sulphonamides to which the disease is susceptible is the routine drug employed in hospital practice in our country.

Donovanosis (Granuloma Venereum)

Donovanosis is a chronic, slowly progressive, mildly contagious disease of venereal origin characterised by granulomatous ulceration of the genitalia and neighbouring sites with little or no tendency to spontaneous healing. The disease is endemic in the States of Madras, Andhra and Orissa and is notorious for its chronicity, intractability and tendency to recurrence after apparent healing. In the pre-antibiotic era, the toxic antimony compounds were the standby in the treatment of the disease. The success of treatment with antimony compounds was in inverse proportion to the duration and extent of the disease. The tendency to recurrence after apparent healing was the rule rather than the exception and antimony resistance and toxic intolerance to the drug were the disquieting features in the management of the disease. Within the past few years, the therapeutic effects of a battery of the newer antibiotics have changed the prognostic outlook of the disease.

Penicillin is ineffective in curing the disease, although it has a place in combating the associated banal infection. Streptomycin, erythromycin, carbomycin and the broad-spectrum antibiotics, chloramphenicol and the tetracyclines, have been reported as equally effective therapeutically in the cure of the infection. The minimum effective dose of streptomycin which has been largest in use is

20 g. administered parenterally at the rate of 2 g. daily for 10 days.

Experiment *in vitro* and clinical observations show that initially, susceptible microorganisms develop resistance to streptomycin much more easily and quickly, than to other antibiotics. With the increasing tendency to resistance of granuloma venereum to streptomycin, it was encouraging to find reports of the therapeutic efficacy of the broad-spectrum antibiotics, with the recent additions, erythromycin and carbomycin, in the treatment of this intractable disease. The minimum total dosage is 20 g. of the antibiotic administered orally at the rate of 500 mg. every 6 hours. Chloramphenicol can also be administered by the intramuscular route.

Lymphogranuloma Venereum

No specific drug has yet been discovered for the cure of the disease, although the sulphonamides and the broad-spectrum antibiotics have been therapeutically useful. The assessment of cure is based only on clinical observations and freedom from recurrence. During the past 16 years, sulphonamides have been the standby in the routine treatment of LGV. In spite of its toxicity and a diminishing therapeutic activity, the cheapness of the drug and its easy availability have necessitated the continued use of the drug in hospital practice.

With the advent of the antibiotics, it was natural that their potentialities should have been investigated in the treatment of the disease. Penicillin and streptomycin have been found to be of limited or of no value in treatment. Since all the broad-spectrum antibiotics have been found to be equally satisfactory from a clinical standpoint, it is difficult to decide which of the antibiotics should be the drug of choice for the treatment of LGV except on the basis of the frequency of side reactions. The present high cost of the drugs is a serious deterrent to their large-scale routine use. The drugs may be administered orally or intramuscularly. The dosage range and the duration of therapy with these antibiotics will vary with the stage of the disease and the individual clinical response of the patient. An acceptable dosage for the early inguinal adenitis is 1 g. in divided doses, daily for a minimum period of ten days. For the treatment of the chronic manifestations of the disease 20 g. in divided doses for a period of 20 days is considered an effective therapeutic minimum. Some cases with tardy response may require retreatment once or twice.

Summary of the Status of the Antibiotics in V.D.

Penicillin of the repository type is the most efficacious and rapidly curative in the treatment of the two major diseases, syphilis and gonorrhoea. Penicillin is ineffective in the other three minor venereal diseases—chancroid, donovanosis and lymphogranuloma venereum. Streptomycin is effective in gonorrhoea, chancroids and donovanosis, but on account of the tendency of the organisms to develop resistance quickly its use should be reserved for the treatment of donovanosis only as the other broad-spectrum antibiotics, are too costly for routine use though effective.

Broad-Spectrum Antibiotics

Chloramphenicol and the tetracycline compounds are therapeutically equally effective in all the five venereal diseases but are inferior to penicillin in their action on syphilis and gonorrhoea. In penicillin-sensitive patients these antibiotics may have a place. The oral route is to be preferred except in the case of chloramphenicol where parenteral administration is equally effective and devoid of local discomfort or pain.

Tetracycline appears to be the least productive of toxic reactions among the group.

Penicillin as the oldest antibiotic and extensively and indiscriminately used seems to be the most potent sensitiser among the antibiotics.

An Open Mind

Never refuse to see what you do not want to see, or what might go against your own cherished hypothesis, or against the view of authorities. These are just the clues to follow up, as is also, and emphatically so, the thing you have never seen or heard of before. The thing you cannot get a pigeon-hole for is the finger-point showing the way to discovery.—Sir Patrick Manson (1844-1922)

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PROGRESS OF SURGERY DURING THE LAST TWENTY-FIVE YEARS

P. CHATTERJEE, M.B., F.R.C.S.

Calcutta

INTRODUCTION

It is not an easy task to review the progress of surgery during the last twenty-five years. During this period surgery has grown into different major specialities. Enormous volume of contribution of far-reaching importance has been made in each one of the specialities and it is not possible to detail them in the brief compass of this article. The purpose of this paper therefore will be nothing more than an attempt to chronicle the more important advances that have been achieved and indicate the trend of activities in different spheres.

During the second quarter of this century surgery made phenomenal progress. It has grown to its present stature in spite of pessimistic forecasts by many in the past. Alex Bayer observed in 1833: "Surgery seems to have attained the highest degree of perfection of which it is capable." Erichsen in 1873 said: "The abdomen, chest and brain will for ever be shut from the intrusion of wise and humane surgeons." These and various other statements of the like only represent the psychological frame and egoism of some of the *current generation of all ages* who are inclined to think that very little of importance was known before them; very little has been left unthought of and undone by them. The savants of the preceding generations of the profession struggling against odds but endowed with astute clinical sense and commendable insight have left behind for their successors ideas, ideologies and wealth of material that have formed the basis for further developments. The world is progressive. In spite of the pessimistic utterances by some in the past, the ever dominant personalities of the present generation have respectfully taken advantage of their rich legacies and defying stagnation, have taken up the challenge against the predicted 'impossibles'. The various developments and progress that we find all round us in different spheres of surgery today stand as a relic to their intelligence, power of original thinking, creative faculties, industry and indefatigable energy and their innate desire to expand their heritage for the service and succour of humanity.

The two great wars within a space of twenty years during the first half of this century brought fear, hatred, bloodshed and suffering in their trail. At the same time, during the periods that followed them a multitude of information was collected for study and deliberation. New problems cropped up for adjustment and solution. All this has given a new orientation to the surgery of the present day.

The recent advances in the related fields have made the increasing scope of surgery possible. Of these mention may be made of the improvements in anaesthesia; the control and management of shock and shocklike states; the ideas of fluid and electrolyte balance and nutritional requirements of patients; the use of blood and plasma transfusion, of plasma expanders and electrolytes; various investigative, diagnostic and therapeutic measures; studies of biochemical and other related findings in health and disease. To this has to be added the invention of very many newer and more refined ingenious instruments and appliances that have facilitated diagnostic and operative procedures in various ways.

Sustained progress in biochemistry and biophysics has kept pace with the increasing demands for the solution of so many diverse and intricate problems concerned with bodily functions and their treatment. Experimental surgery has enriched the advance with an ever-increasing volume of scientific data to be utilised for clinical trial and application.

Radiodiagnosis and radiotherapy have progressively developed during the last fifty years. This has been possible due to improvements in equipment, advancement of radiographic technique and better comprehension of the biological laws that govern their action and their reaction in the tissues. This sister science has made the profession wiser in realising what is going on inside and helped it in more accurate localisation of the diseased processes by direct and indirect vision. X-ray is the third eye of the surgeons.

The practice of present day surgery really commenced with the introduction of anaesthesia. Dr. Lang of America administered ether in 1842. In England Sir James Simpson discovered the anaesthetic effect of chloroform in 1846. The beneficient agency of anaesthesia greatly dispelled the horrors of operative interference.

Next came the epoch-making discovery of Pasteur and its practical application by Lister in the sixties of the last century. Working quietly and feverishly in his laboratory, the French chemist Louis Pasteur conceived the idea that putrefaction and fermentation were dependent upon living organisms which gained access into the tissues from the atmosphere, from dust on surrounding objects and especially from other putrefying media. His ideas were later on given concrete shape by Robert Koch in 1876 to whom the fundamentals of present-day bacteriology owe their origin. The torch lit by Pasteur burnt brightly in the hands of Lister who enthusiastically grasped the significance of Pasteur's conception and put into practice the early principles of antiseptic surgery in 1867. These three great discoveries of the last century form the bedrock on which all subsequent developments of medicine and surgery could be possible.

The greatest advance during the second quarter of this century has been the discovery of sulphonamides by Domagk in 1935 and that of penicillin by Fleming in 1928 and of streptomycin by Waksman and others in 1944.

The full impact of these revolutionary discoveries and their subsequent developments is evident in the vast extensions of the technology of surgery.

Progress in Anaesthesia

Since the introduction of inhalation anaesthesia over a century ago there has been progressive refinements in its technique of induction and the introduction of local and conductive infiltration anaesthesia, spinal and intrathecal anaesthesia. In recent years intravenous anaesthesia with an increasing number of agents is being used singly and synergistically. The introduction of relaxants and other adjuncts to inhalation anaesthesia and their judicious application in surgery of different regions, particularly an open thorax, has solved many problems which are being more and more appreciated. Anaesthesia during induced hypotension is being practised more and more in recent years to enable surgeons to get a comparatively bloodless field in certain types of operation.

Surgery of Infection and Infective States

Though the practice of antiseptic and aseptic surgery progressed from the sixties of the last century, the medical profession was greatly handicapped in controlling and treating acute and massive infections, bacteriaemia and septicaemia. They had their scalpel which when used in these states often caused more harm by breaking down the protective barriers. They had to depend on the natural resistance of the patients and on the use of certain drugs which were indifferent in their action in producing immunity.

The discovery of sulphonamides and penicillin has fulfilled the long felt want. Since then various other broad-spectum and other antibiotics have been synthesised and are available for use such as streptomycin, neomycin, bacitracin, erythromycin, oxytetracycline, aureomycin, chloramphenicol and others each having individual or collective antibacterial properties. Some of these drugs are bactericidal ; others are bacteriostatic. The discovery of streptomycin and para-amino salicylic acid group of drugs has greatly advanced the treatment of tuberculosis. The maximum effect of the antibiotics is obtained by their intelligent employment. The services of efficient bacteriologists are ever important to enable the clinician to prescribe the particular chemotherapeutic or antibiotic preparation that would give the maximum result in particular types of infections. Pending the bacteriologist's reports the appreciation of the clinician about the nature of the infection should guide him to forestall treatment. The use of two antibiotics instead of one in the hope of getting better result is a natural tendency and has become an increasingly common practice. But it is doubted if in all cases the desired result can be obtained. Gradually it is being known that there may be antagonism between the two and in such cases the result may be worse. It has again been stressed time after time that antibiotics may control a systemic infection, cause localisation of or abort an infection. But it cannot at all times compete with the need of surgical interference.

The introduction of insulin by Banting and Best in 1924 and its therapeutic use for the control of diabetes has been a great advance in the treatment of surgical diabetes.

The need for revision of the principles of treatment of local wounds was strongly felt during World War I. Methods were evolved and during World War II some standardisation in dealing with them had been reached. This has been possible by a better understanding of the drawbacks of older methods and the beneficial effects of chemotherapeutic and antibiotic drugs in preventing or attenuating infections in accidental open wounds. Primary excision of wounds, thorough debridement, closed plaster technique and secondary suturing as and when called for under the umbrella of antibiotics have improved results and reduced the suffering of patients. Morbidity and mortality rates have been materially reduced ; so also the disability time.

Management of extensive wounds caused by burns has been a headache to the surgeon. No satisfactory solution applicable to all cases has yet been reached. At present statistical data are being collected regarding the practicability and efficacy of the exposure method of treatment. Some general principles are however agreed upon. They are surface cleaning and suitable covering to the raw surface by tanning at the earliest possible opportunity ; avoidance of frequent change of dressings ; prevention of scar formation and contractures by proper rest, position and splinting ; early skin grafting whenever necessary, and routine skin grafting in deep burns after surgical excision and toilet.

Physiological Upset in Major Surgery

Most of the ventures that have resulted in the progress of present-day surgery would not have been possible or successful, nor perhaps even attempted had it not been for the concomitant availability of large amount of information pertaining to the support of the physical needs of patients following extensive surgery. These advances have practically revolutionised our concept of the treatment necessary at various stages when major surgery has to be performed. The maintenance of metabolism, nutrition, replacement of fluid and judicious use of antibiotic therapy is now the sheet-anchor in the treatment of surgical patients.

A surgical trauma of any significance produces shock. To this is added the loss of blood that is the natural outcome of an operation. The effects of prolonged anaesthesia again add to the alterations in the metabolic processes. Severe accidental injuries, infective processes, extensive burns, intestinal intoxication following obstructions and strangulations, peritonitis and such other conditions present more or less identical problems.

Studies have been directed to explain the nature of deficiencies caused. Attention has been focussed towards changes in the physical properties of blood, e.g. haematocrit index, blood volume and serum proteins and biochemical changes, such as changes in pH values and alterations in the acid-base equilibrium. The effects have again been specifically studied in relation to the total excretions by normal routes, the kidneys, lungs, skin, bowels and so also by abnormal routes such as the gastric and intestinal suction drainage, biliary, pancreatic and intestinal fistulae.

The overall pattern of shifts and redistribution of water and solubles following surgical stress has not yet been fully understood and the search for specific reservoirs that may be responsible for diversion of sodium ions in particular is being continued.

Along with these changes there is alteration in the formed elements of the blood and the lymphatic system. The nitrogen and carbohydrate balance are altered. The balance of nitrogen becomes negative and there is inability on the part of the organism to utilise exogenous amino acids for synthesis of structural body proteins. The metabolic alterations are associated with certain morphological changes and some other metabolic changes. They depend to a great extent on the production of an increased amount of hormones by the adrenal cortex. The inter-relation of the various hormonic activities has yet to be solved ; but most of the investigations have centered round the pituitary-adrenal activity. This forms what is known as the "stress syndrome".

It is found that during the period following extensive surgery when sodium and chlorides are rigorously withheld, there is a rise in the excretion of potassium in the urine, the plasma level of the compounds are commonly reduced. A satisfactory explanation of this anomaly is not yet forthcoming. Metabolic alkalosis is most commonly seen in surgical patients as a result of loss of large amounts of gastric secretion, a material which has a high chloride content with relatively low concentration of sodium. This is further complicated when associated with potassium deficiency.

Fluid replacement—In order to replenish blood volume deficits and maintain adequate fluid balance, transfusion of blood, plasma, amino acids, plasma expanders and electrolytes in the shape of saline, glucose, etc., are fairly frequently used. The relative indications of the requirements have to be carefully assessed and the necessary amount transfused.

The importance and need of blood and plasma transfusions had been better realised during World War II. In order to enable the patients who need it, blood banks have been established and since that time blood transfusion has been used fairly frequently as a therapeutic measure. It is also realised that blood transfusion is not without hazards and due care is necessary in its use.

So also in cases of electrolyte transfusion, the risk of water intoxication has to be kept in mind. Over-enthusiasm is not always rewarded.

In cases of severe burns, fluid replacement to overcome the pathological state has to be carefully planned. Plasma is primarily lost in burns. Blood is also lost due to haemolysis and haemoglobinaemia. In addition some blood is sequestrated into the fascial spaces in the burnt area and in the more dormant parts in the circulation and become "sludged". Excretion of cortical hormone

is found to be increased during the first few days or longer in the burnt patient due to increased adrenal activity which favours sodium retention and augments excretion of potassium. The nature and quantity of fluid to be transfused will depend on the degree of burns and hourly urinary excretion and the patient's response to treatment. Of the fluids available and useful in hypovolemic shock in burns, plasma is the one of choice and should be given in adequate quantity. Blood transfusion is given when normal haemoconcentration has been restored by plasma. Saline and glucose infusions are given early in limited quantities so long as other fluids are not available. Plasma substitutes should be used if plasma is not available. Cortisone helps therapy during the first few days.

Patients suffering from prolonged debilitating diseases requiring surgery come with established malnutrition and hypoproteinaemia and are poor surgical risks. Some of them, due to the nature of their disease, cannot eat. Patients suffering from malignant diseases are prone to hypoproteinaemia. The basic factor that produces this is not yet fully understood. In these groups of cases deprivation of calories as well as of proteins results in general loss of body fat and protein. A loss of muscular mass is generally evident. Also disturbed are the osmotic potential of plasma and cellular protein, liver and adrenal function. The enzyme systems are also affected. These patients if operated upon without preliminary restoration of protein balance are liable to infection, and wound disruption. Intravenously administered plasma and blood for a few days and oral administration of protein hydrolysates and vitamins to those who can eat will alter their physical state and establish a protein balance and they will stand operative interference much better.

Malignant Growths

During the past quarter of a century considerable advances have been made in the concept of cancer as a disease entity. Although the actual cause of cancer is not known its development depends both on exogenous and endogenous factors, the control of which can influence the cause of the disease and produce remissions, inhibitions and sometimes arrest of the neoplastic processes. The endogenous cause of cancer was first noted in some types of tumours with a definite hereditary factor such as glioma of the retina, rectal and colonic cancer in familial polyposis of the colon, and more than statistically significant incidence of breast cancer in families. It is also recognised that the breast is hormonally dependent on the steroid metabolism, prostatic cancer is also hormonally controlled but this in addition is associated with the excessive formation of the enzyme acid phosphatase. More recently the possible relation of the enzyme tryptophane with bladder cancer and the hormone intermedin (melanocyte stimulating hormone) with melanotic cancer has come to light.

The general principles of the treatment of malignant diseases still remain what they were. The conviction has gained a more firm root that neither operation alone nor radiotherapy by itself can cure. During the period under consideration the surgeon, the radiologist, the physicist and others have each contributed his mite in fighting malignant diseases. Though the prospect is not so gloomy now, much more headway has yet to be made by the combined efforts and co-operation of all concerned to gain the objective. With advances in operative technique and pre-operative, operative and post-operative management the scope of radical surgery has been greatly extended. Many of those who were considered as poor surgical risk cases can thus get the benefit of surgery. Malignant diseases in those areas where extensive resection in the past used to be avoided, such as malignant growths of the face, mouth, jaws, scalp and such others, because of the fear of mutilation, loss of tissue, and disfigurement are nowadays taken up, as plastic surgery has made such progress as to enable the disfigurements to be rectified and open areas satisfactorily closed. It has again been possible to cover areas left behind inside the mouth by suitable prosthetic appliances. Skin grafting is utilised for gaps in the orbit. Losses caused by removal of bone can be rectified by bone grafting. More radical *en bloc* removal of the glandular area of the neck has become possible. The most important deterrent to the removal has been the involvement of the carotid sheath. At the present day with facilities for arterial transplantations the vessels involved are resected along with the matted mass and the gap bridged over by an arterial graft.

In the treatment of carcinoma of the breast McWhirter (1948) has brought forward a new line of thought by advocating local mastectomy and radiotherapy. As opposed to this, the scope of radical surgery has been extended to what may be called superradical mastectomy on the basis of the findings that in a certain percentage of cases the parasternal and supraclavicular glands are affected and that the apparently normal breast may develop a carcinoma later on. Superradical mastectomy aims at removing half of the sternum with the costal cartilages and removing the parasternal and internal mammary group of lymphatic glands on the one side and clearing out of the supraclavicular glands. Some aim at removing the

other breast as well. Though the operative mortality in the hands of Urban, Wagenstein, Noel and others have not been great, there is no gainsaying that it is a formidable task and should not be taken lightly. The follow up statistics are not yet at hand to assess and justify the interferences and compare their results with the often practised radical mastectomy. In spite of the fact that every now and then one finds that the other breast develops malignancy, the very idea of removing the yet clinically healthy breast as a routine measure is revolting and is sure to cause a tremendous psychological upset.

Sir Stanford Cade has recently reviewed the question of treatment of advanced cancers, especially from the standpoint of palliation and the well-being of these unfortunates. The greatest advance in this direction has been the development of total and partial viscerectomy by Brunschwig in 1948 for cancers originating in one of the pelvic organs—uterus, vagina, rectum or bladder. These procedures have widened the field of usefulness of surgery in the control of cancer. The limitations to this procedure are invasion of tissues outside the pelvic fascia and distant metastases, visceral and skeletal. Complete excision of the tumour has however been achieved by pelvic viscerectomy in patients who are technically inoperable if lesser procedures are carried out.

The most annoying sequalae of the operation have been a "wet colostomy" and recurrent febrile attacks from ascending pyelitis. To overcome these complications further technical progress has been made by Rubin (1948) and others by providing an artificial bladder from a segment of large or small intestine into which the ureters are implanted. Such a bladder forms an urinary fistula preferably in the middle line at or just below the umbilicus.

Cancer in two anatomical sites only, the breast and the prostate can be controlled by hormones. Beatson was the first to recognise the effect of hormonal alteration on the breast. He performed the operation of bilateral salpingo-oophorectomy in 1895. Researches of Huggins in 1951 have infused new interest on the problem. Observations on the excretion of acid phosphatase in prostatic cancer and synthesis of stilboestrol have been the most important steps in the development of a completely new method of controlling cancer of the breast and the prostate.

In a group of advanced cases of carcinoma of the breast bilateral oophorectomy and bilateral adrenelectomy are performed for relief of pain and prolonged regression of the growth. The treatment helps in those cases only where the cancer cells are of sufficient functional maturity. Cade has proved in experimental animals that the pituitary hormone prolactin is the key hormone in mammogenesis. Clinically it is seen that the significant regression in breast carcinoma after oophorectomy and adrenalectomy may stop after a few months and in these cases hypophysectomy in experimental animals has brought about the control. Clinical trials will show if better improvement will be gained by putting the pituitary out of gear.

In carcinoma of the prostate, operative treatment may be possible only in a limited number of cases and the results are far from satisfactory. Bilateral orchidectomy and administration of synthetic oestrogens, e.g., stilboestrol over a prolonged period, have a marked effect on the retrogression of the growth. In cases where these methods fail to give relief reduction in androgen output can be attempted by supressing the activity of the pituitary by radiotherapy or by bilateral adrenalectomy. In cases complicated by retention, transurethal resection of the obstructing mass will help, otherwise a suprapubic cystostomy is indicated.

The prospect of improvement of results in malignant growths of limb particularly sarcoma of bones is yet unsatisfactory. Wide excisions are performed for soft tissue malignant growths and when for radical removal the main vessel of the limb has to be sacrificed, arterial grafting is done. Of late high amputations and fore-quarter and hind-quarter amputations or hemipelvectomy are performed more frequently, especially for bone sarcomas, to relieve the patients of the distressing limbs and to prolong life in neoplasms of low grade malignancy. Hind quarter amputation and hemipelvectomy have become a rational procedure through the contributions of Gordon-Taylor during the last two decades.

Advances in radiotherapy in malignant growths —Deep x-ray therapy with x-ray at 250 Kv., use of radium and implantation of radon seeds have been used to cure malignant growths, to supplement operative procedures and for the purpose of palliative treatment. Radiotherapy has a wide field of usefulness quite beyond the range of surgery, which is limited by anatomical considerations and by the natural characteristics of the tumour.

During recent years the most significant advances in radiation treatment of malignant diseases have been those contributed by radiation physicists and radiation biologists. Realising the various drawbacks in treating patients with x-ray at 250 Kv., million and multimillion volt range apparatuses have been put up and are being used

for treatment with better results. The use in radiation of very short wave-length obtained from radium, radioactive isotopes such as cobalt, gold, sodium, bromine has also given greater promise.

In contrast to previous experience with conventional radiation therapy, for supra-voltage therapy properly applied, the skin and superficial tissues are no longer the limiting factor relative to the dose. Rather, the deeply located normal tissue surrounding the cancer now becomes the limiting factor. Their use causes least possible damage to the skin and subcutaneous tissues, lung and bone marrow and the least inconvenience to the patient. The incidence and severity of radiation sickness are greatly diminished and there is less haemopoietic damage. With the help of rotational therapy the x-ray beam can be constantly focussed on the tumour.

Radioactive isotopes—Since the discovery of artificial radioactivity in 1934 by the Joliot-Curies many radioactive isotopes have been produced. Over a hundred are now regularly available. Only a few of them, however, have as yet attained established places in the medical armamentarium. At the present moment radioactive gold, iodine, phosphorus, sodium, and bromine are being used in the surgical field. They are being used (*a*) as a measure, (*b*) as tracers and (*c*) as therapeutic agents.

Radioactive iodine (I^{131}) has established its claim in the treatment and retrogression of thyrotoxic goitres. It is also being used in selected cases of malignant thyroids.

Radioactive gold seeds, tantalum wire and cobalt are being used for insertion into malignant growths of the bladder. Radioactive sodium and bromine and cobalt are also used for this purpose.

Surgery of the Endocrine Glands

Surgery of the thymus gland owes its origin to Blalock (1936). Its limited use is in myasthenia gravis. Removal of neoplasms of the thymus have been followed by bad results. The status of the thymus as an endocrine organ has been recently confirmed by Professor Andrew Wilson of Liverpool University (1953).

Better understanding of the physiology of the adrenals in recent years and its interdependence with other glands of internal secretion has been the basis of usefulness of adrenalectomy in breast and prostatic malignancy. This subject has already been dealt with. From these studies several other important facts have come to light. The medulla of the adrenal is developed from the sympathetic nerve elements and produces adrenaline and noradrenaline. Tumours of the medulla —phaeochromocytomata—and their characters have become better known and their surgical removal has a marked effect on hypertension and hypertensive crises.

The hormone-controlling portion of the adrenals is the cortical part. The isolation of cortisone and its clinical uses have made therapeutic measures rich in various conditions. Hypertrophy of the cortex is responsible for Cushing's syndrome and adrenogenital syndrome. Cushing's syndrome which was thought to be an effect of basophil tumour of the pituitary has been found to be benefited by adrenalectomy. Either an adrenal tumour is removed when one is present or a subtotal adrenalectomy is performed when there is bilateral hypertrophy. After removal, the deficiency in cortisone secretion has to be supplemented for some time. The results have been encouraging. Adrenogenital syndrome consists of change of sex or precocious puberty is the effect of hyperactivity of the adrenal cortex. Surgery in the presence of tumours has proved of benefit.

Thoracic Surgery

Injuries of the chest—The difficulties in the management of chest injuries with open pneumothorax have taxed the ingenuity of the surgeons for over a long time. The experiences of World War I afforded a fillip to better understanding of the physiological disturbances connected with the open chest and of other pathological lesions within it. Important advances were effected in their treatment. The existing ideas in the management of open chest wounds with concomitant injuries and disruption of the vital organs and structures and the lodgment of foreign bodies have undergone further changes during World War II. In the years that followed, surgery of the chest has been revolutionised.

The management of "sucking-in chests" leading to sucking in and blowing sounds accompanied by frothing of blood and flapping mediastinum has been standardised. In addition to the necessary treatment of shock and haemorrhage which are the obvious outcome of any major injury, the general principles are the liberal use of oxygen and maintenance of free airway ; keeping the tracheobronchial tree free of blood and mucus, if need be, by catheter or bronchoscopic aspiration to prevent oedema and wet lung. Closing of the external wound is undertaken at the earliest possible opportunity. As soon as circumstances allow, proper surgical cleaning of wound has to be taken in hand with necessary repair of visceral injuries.

Thoraco-abdominal approach had to be taken advantage of in dealing with injuries of the chest with involvement of abdominal organs. This approach has been perfected and nowadays this is the standard approach to deal with carcinoma of the oesophagus, operations for hiatus hernia, high gastric resections, splenectomies and many other conditions.

Injuries to the heart require very prompt attention and under favourable conditions extraction of foreign bodies and wound repair have been undertaken with some measure of success. Wounds accompanied by tamponade have been treated by aspiration. Open operation for repair is undertaken when aspiration fails.

Lung abscesses—During the period under review the treatment of lung abscesses has changed. Bronchoscopic evacuation, incision and drainage of radiologically localised cavities were practised, but were not attended with promising results. With the availability of penicillin and streptomycin the prognosis of these cases has significantly changed. Surgical treatment becomes necessary when massive doses of antibiotics and carefully planned postural drainage fail to control the infection effectively and the condition tends to become chronic or when the resultant innocuous cavity tends to persist and produce bronchiectasis. Under these circumstances segmental pulmonary resection is the operation of choice.

Bronchiectasis—Discussion still centres round the identification of cystic disease of the lung, large solitary cysts and bronchiectasis and as yet a final verdict is not forthcoming. The aetiology and mode of development of bronchiectasis is still controversial. Radiology, radioscopy and bronchography are the means of accurate diagnosis and localisation of the condition. Of these, bronchography is the most important. Management of early cases of bronchiectasis with antibiotics, postural treatment and physiotherapy may lead to a renewal of pathology after collapse of a lobe or after fresh respiratory infection. Medical treatment in established bronchiectasis is only symptomatic and palliative. Lobectomy or lung resection is the only curative procedure in these cases. The result of surgical treatment with removal of a lobe or a segment of it is no longer as dangerous as before and if taken advantage of reasonably early, effects a cure. From the time segmental resection has found its due place in surgery, bilateral lobectomy is being practised more often with a low mortality rate of 1 per cent to 3 per cent in experienced hands.

Pulmonary tuberculosis—The various forms of surgery to effect a satisfactory collapse with artificial pneumothorax, extrapleural pneumonolysis, pneumoperitoneum, phrenicotomy and phrenic evulsion, thoracoplasties, apicolysis and other methods have been practised for the last thirty years and their usefulness and limitations are well established. In 1935 pneumonectomy became an addition to the surgical treatment. The operation, however, in its initial stage was considered a serious procedure but convincing reports by Thornton and Adams in 1942 and of Churchill and Klopstock in 1943 stimulated surgeons to perform the operation more frequently. By this time they were able to take advantage of the improvements of anaesthesia in open chests. Moreover, the works of Churchill and Belsey brought forth newer ideas of the anatomy of the lungs. According to them a bronchopulmonary segment rather than a lobe formed the fundamental unit of the lung. These findings form the basis of segmental resection of the lung so often performed in the present day for pulmonary tuberculosis.

The introduction of streptomycin in the treatment of tuberculosis has greatly improved the prognosis of medical treatment. On the one hand it has contracted the field of surgery and on the other, it has broadened the scope of segmental resection. *Pari passu* the more advanced techniques of radiographic studies, tomography, bronchography, and bronchoscopy, have enabled better localisation of tuberculous foci.

Emphasis is laid on the proper selection of cases and proper localisation of foci before resection is undertaken. Well regulated medical treatment should be given the first preference. Thoracoplasties and other less radical methods are taken advantage of wherever experience dictates that they may serve individual needs. Pneumonectomy however should not be delayed on the off chance of a cure if best results have to be gained.

Neoplastic diseases inside the chest—The awareness of the disease and the improved methods of detection have enabled the surgeons to come to their diagnosis and localication. Radiotherapy has not met with any measure of success in the treatment of carcinoma of the lungs. The surgical treatment by pneumonectomy and ablation of the glandular enlargements is the operation of necessity. Time is not yet ripe to judge the long-term results. There are other neoplastic conditions where early diagnosis and removal have been possible with fairly satisfactory results.

Hiatus hernia—The diagnosis of the condition had been difficult, its symptomatology was not well known and its treatment unsatisfactory. Improved methods of investigation have made its recognition possible more frequently and its operative cure has

been greatly facilitated by operation through an open thorax.

In fact, with continued improvements in anaesthesia, ease in controlling infection and advantages gained by the roentgenological and other methods of diagnosis and localisation and an altered outlook in the interpretation of intrathoracic shadows, the surgeon does not vacillate in performing an exploratory thoracotomy in these days to corroborate the diagnosis and extend the necessary curative therapy.

Cardiovascular Surgery

Cardiac surgery—Despite Sir James Paget's statement in 1896 that "The surgery of the heart has probably reached the limits set by nature to all surgery. No new methods and no new discovery can overcome the natural," his successors did not cease to think and act. In the first half of this century, Sir Arbuthnot Lane and others predicted the possibilities of cardiac surgery. In fact, Souttar in 1925 dilated a stenosed mitral valve and Tuffier dilated an aortic stenosis. It will therefore be erroneous to assume that cardiovascular surgery is something new ; but its progress during the last fifteen years and the rapid stride that this branch of surgery has made since after World War II is simply "phenomenal, exciting and sensational". The progress has been possible due to a close study of the problems presented by different groups of cases, better understanding of the haemodynamic effect of various developmental and pathological entities, improved methods of diagnosis by cardiac catheterisation, angiography, radioscopy and others. The ease and safety with which surgery of the thorax is now carried out have made it possible to perform long and complicated operative procedures on the heart. Cardiac catheterisation has enabled us to measure pressures, oxygen saturation and direction of blood flow within the heart. Angiography and aortography can further increase the accuracy of preoperative diagnosis so essential for surgical treatment. The anaesthetists have played a significant role in the progress. In the past, attention was paid more to the supply of adequate oxygen during anaesthesia. It is now recognised that it is not only the adequate supply of oxygen that is necessary but there is a renewed awareness of the proper elimination of CO_2. The factors of proper ventilation, hypoventilation and their repercussion on bodily functions are under close analysis and today the observers are keen to recognise the manifestations of evidences of respiratory acidosis and alkalosis and ensure their prevention and management. As in every field of surgery, antibiotics have contributed their quota. The discovery and judicious use of anticoagulants, viz., heparin, ethyl biscumacetate and other drugs have made investigations and surgical interferences possible and have minimised far-reaching post-operative complications.

Further developments in this speciality will depend to a great extent on the perfection of methods which will allow direct operations on a bloodless heart. Three methods are now available whereby operations may be carried out on the widely open heart. These include hypothermia, cross circulation and mechanical heart-lung bypass.

From the experiences derived from study on experimental animals, operation under hypothermia has been carried out by Bigelow and Swan and the results encouraged further study and clinical application.

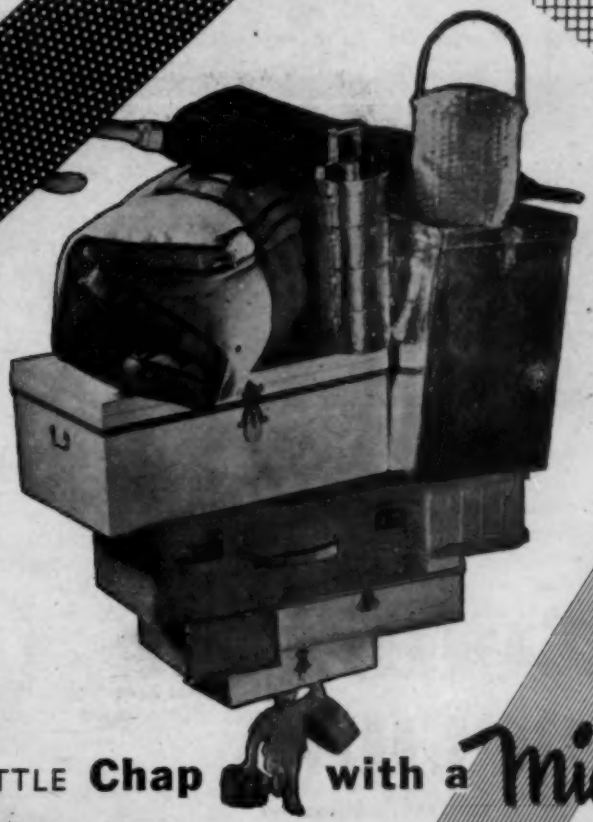
At the present moment operation for patent ductus arteriosus is very gratifying ; so also are the operations for mitral stenosis. The operative treatment for aortic stenosis is being successful in increasing number of cases.

The brilliant contribution by Blalock and Taussig in 1944 in anastomosing a systemic artery to the pulmonary artery in cases of tetralogy of Fallot to overcome pulmonary ischaemia and cyanosis and peripheral cyanosis and thereby adding an artificial patent ductus arteriosus, has been rewarded with gratifying results. The same condition has been approached by Pott by aortic pulmonary anastomosis in 1946 by direct division of the pulmonary valve by passing a valvulotome and by excision of infundibular stenosis by Sellors and Brock in 1947. The last operation is specially indicated for all cases of pure pulmonary stenosis and many cases of Fallot's tetralogy with valvular obstruction. The results of these operations in selected cases have been very encouraging.

Operative relief of coarctation of the aorta by resection and anastomosis or by resection and arterial homograft is satisfactory in selected groups of cases. The long-term end-results of homografts are still awaited.

Excision of parietal pericardium in constrictive pericarditis performed thoroughly can greatly relieve and stabilise the patient's condition. From the nature of the underlying pathology it can be well realised that complete removal may not be possible at one sitting and that no treatment is known as yet that can ensure a permanent cure.

Vessel grafting—The newer ideas of reconstruction of blood vessels are an offshoot of the unfavourable experiences of surgeons during World War II. The missiles used during the last



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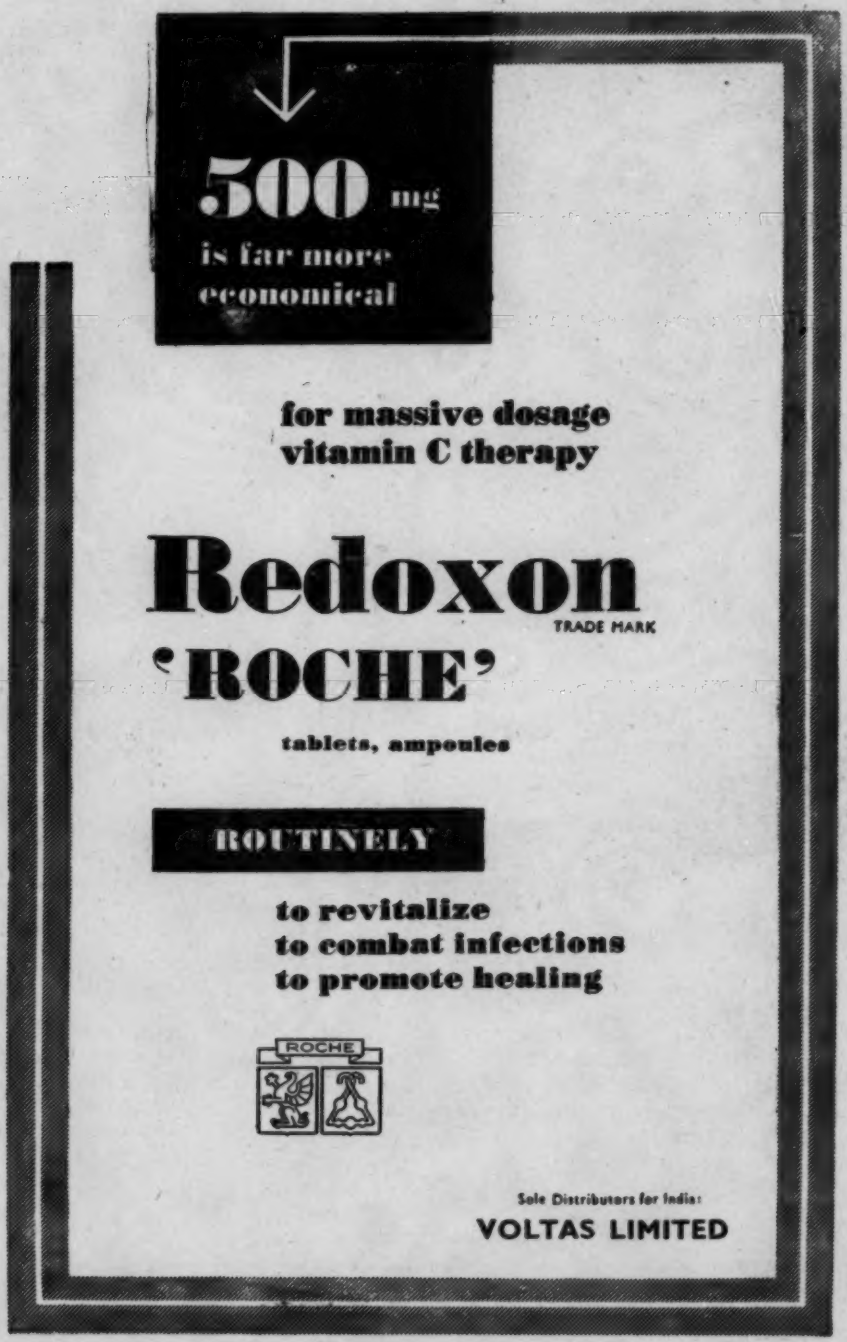
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World War caused extensive mutilation of tissues and disruption of main vessels and their collaterals and mere ligation of the vessels to stop the haemorrhage led to many disastrous results, immediate and remote, e.g., gangrene, intermittent claudication, muscle wasting and other symptoms of ischaemia. In order to overcome these disabilities ways and means were intensively sought for. This has led to the progress of surgery of vessel implantation or vessel grafting.

Vessel grafting is nowadays made use of in various conditions with fairly satisfactory results. Of these special mention may be made of congenital malformations in the heart and great vessels; various types of vascular trauma; saccular aneurysm; traumatic aneurysm and arteriovenous fistulae; primary arterial thrombosis; some cases of carotid body tumours.

In addition to these its important use is the treatment of ischaemic symptoms of the lower limb, traumatic arterial spasms and to prevent Volkmann's contracture in selected groups of cases.

The best material for arterial grafting is an arterial homograft. Vein to artery graft has been made use of specially to treat war casualities when a homograft was not possible to secure, and of late has given better results. It has certain disadvantages. A vein contains little elastic tissue, and tends to dilate. It is difficult to suture when arteriosclerosis is present. It causes pain and oedema of the lower limb from where the saphenous vein has been taken for grafting. In rare instances autografts are used. For substitution they are ideal but the difficulties in their availability can be well understood.

In recent years artery banks have been established where homografts of various sizes are stored and used whenever necessary. The homografts are collected from persons dying of accidental injuries and who are free from constitutional or infectious and contagious diseases. Collection is advised within six hours of death. Different techniques are made use of to preserve them in a sterile condition and keep them viable for a prolonged period. The methods of freezing and freeze-drying are now proving to be an important advance in artery banking technique. Other methods like irradiation, etc. are under investigation and trial.

Arteriography is extensively used to diagnose and locate arterial occlusions and assess their degree and distribution.

Abdominal aortography was first performed by Reynaldo dos Santos in 1929. He found its importance in urology. In 1950 Griffiths first reported the findings of aortography in a series of urological cases and since then the method of examination has found a definite place in urology and more recently in vascular surgery.

Judicious use of anticoagulants has greatly helped in the surgery of blood vessels.

Though arterial grafting is proving useful in more and more number of cases one should select his cases and be cautious in employing it in patients with arteriosclerosis. In these cases arterial grafting can benefit the local manifestations alone of a generalised disease only if these predominate to an unusual extent.

Surgery of the Sympathetics

The conception of the anatomy and physiology of the sympathetic nerves commenced with the experimental work by Gaskell in 1896 and by Langley in 1898. Since then the intricacies of the system and its anatomical and physiological bearings have been greatly elaborated. It is now held that the hypothalamus controls to a large extent and co-ordinates the activities of the sympathetic and the parasympathetic reflexes. Its cortical representation is not yet fully defined but it appears to be in the premotor area. Though opinions differ, the essential role of the hypothalamus in the hierarchy of the autonomous nervous system is well established.

Sympathetic disruption for conditions like Raynaud's disease, scleroderma, erythromelalgia, Buerger's disease, arthritis, and the results of neuromuscular inco-ordination of abdominal viscera have interested surgeons for a long time. In an endeavour to find out the causes of unsatisfactory results of these interruptions, further studies have been made and are yet being continued. This has not only modified the scope and extent of sympathetic denervation but has also taught its limitations. From these studies have emerged the different physiological phenomena related to blood flow, vascular tonus and vascular spasm and the means of the recognition of their pathology by different methods of investigation—oscillometry, plethysmography and arteriography, to mention a few. These studies have brought about changes in the treatment of peripheral vascular lesions. New methods of treatment, medical and surgical, are being evolved with promise for the future. Sympathetic interruption is useful in the following conditions:

1. *Vasospastic conditions of the upper limb* —Sympathetic interruption for vasospastic conditions of the upper extremity started with removal of the stellate ganglion and the first thoracic ganglion of the sympathetic chain. The results were temporary, culminating in the extremely troublesome Horner's syndrome. Moreover, after

a brief period of relief, the patients suffered from more serious vasospasm apparently due to increased sensitivity of the denervated vascular musculature to circulating epinephrine. At the present day preganglionic sympathectomy by division of the chain below the third thoracic ganglion and division of any rami associated with the second is the operation of choice.

2. *Vasospastic conditions of lower limb*—Interruption of the sympathetic impulses to the lower extremity has been carried out for the relief of thrombo-angiitis obliterans (Buerger's disease) and other vasospastic conditions. The more intricate distribution of the lumbar sympathetics and their frequent anomalies have made it difficult to denervate the lower limb to satisfaction. It is however generally agreed that removal of the 2nd, 3rd and the 4th lumbar ganglion gives promising results. Boyd and his co-workers have urged the removal of the 1st lumbar. It has however to be noted that the combined removal of 1st and 2nd lumbar ganglion on both sides in the male results in seminal anorrhoea though not impotence. The presence of accessory sympathetic ganglion deep to the psoas muscle makes it inaccessible to the surgeon and when present may mar the results to some extent, but the clinical improvements are not very much interfered with.

Lumbar sympathectomy properly performed and in selected cases greatly adds to the well-being of patients. It helps to improve circulation and thereby leads to improvement in the healing of ischaemic and necrotic foci and make local amputations possible. The almost intolerable "resting pain" of thrombo-angiitis is relieved. The effect on intermittent claudication of the calf muscles, however, are not relieved except in the few in whom the claudication develops on exercise and continues, but the patient can, with effort still walk. In patients suffering from localised thrombosis of blood vessels as determined by an arteriogram, resection of the thrombosed segment and substitution of an artery or vein, preferably an artery, to bridge over the defect has been met with satisfactory results specially in those with mild arteriosclerotic changes. The other two procedures for relief of claudication are myoneurectomy of nerve supplying the muscle which claudicates and tenotomy of the tendo Achilles. The operation of tenotomy is particularly suitable where the condition results from ischaemia of the calf muscles.

3. *Hypertension*—Sympathectomy for relief of hypertension has been a fairly common procedure for a number of years. The rationale is to interrupt sympathetic impulses to the blood supply of the abdominal viscera, particularly of the kidneys. The interruption of vasoconstrictor impulses to the extensive area of vascular bed, where bilateral sympathectomy is performed, results in vasodilatation, increase in the capacity of the vascular bed and consequently, lowering of the blood pressure. The operation practised by Smithwick has been generally employed. It consists of extirpation from the 10th thoracic segment down to and including the 3rd lumbar ganglion combined with extirpation of the greater, lesser and least splanchnic nerves. Gotez however considers this insufficient and he advises and carries out more extensive ganglionic resection which aims at removal of all the sympathetic ganglia from the 2nd thoracic to the 2nd lumbar on both sides.

The result of sympathectomy has varied in different cases. Accumulated experience has led to some standardisation and careful choice of patients who are likely to be relieved by the operation.

A more localised interruption is suitable for the elderly patients with malignant hypertension with bad kidneys and failing sight.

Before the operation is decided upon, it is absolutely essential to investigate thoroughly the renal efficiency by various tests including intravenous pyelography. Advanced renal disease and advanced sclerotic changes in the arteries of heart or brain are contra-indications for the operation.

Fresh avenues for expanding the possibilities of sympathetic denervation are being sought for, based on the role of the sympathetic system on the aetiology of particular pathological states.

Surgery of the Oesophagus

During the last twenty years surgery of the oesophagus has made fair progress. Operative treatment for congenital atresia with and without tracheo-oesophageal fistula has met with a certain amount of success. The basic cause of cardiospasm is yet under investigation. Knight in 1934 held that the spasm is due to overaction of the sympathetic nervous control of the cardia. Sympathectomy however has not given the desired result.

Maingot holds that the underlying cause is a disordered neuromuscular mechanism affecting the epicardia. This is a condition of spasm rather than of inco-ordination of the peristaltic waves. Operations like oesophagoplasty and oesophagogastrostomy have been followed by indifferent results. Heller reported his operation of oesophagocardiomyotomy in 1912. This operation as modified by Maingot has given fairly satisfactory result.

With modern improvements in the technique of radiology the presence of oesophageal diverticulum can be detected more often and surgically treated.

Surgical treatment of carcinoma of the oesophagus still presents diverse problems. During recent times operative removal of the growth together with the lymph glands has been performed more frequently leaving the patient with an oesophagogastrostomy. Operative removal of carcinoma of the lower third has given more satisfactory results. Before the growth is resected it is absolutely essential in these cases to examine the liver and the glands of the stomach and porta hepatis for evidences of metastases. In mid-thoracic carcinomas the right thoracico-abdominal approach first suggested by Lewis in 1946 is favoured by most surgeons. The operative treatment of carcinomas of the superior mediastinal oesophagus presents a difficult problem. In favourable cases, after removal of the growth, the mobilised stomach is brought up anterior to the arch of the aorta and through the apex of the pleural cavity into the neck and anastomosed to the cervical oesophagus at the root of the neck (Sweet's operation). The operation is greatly facilitated by resection of the medial portion of the clavicle and the first rib.

In inoperable growths and in patients who are poor surgical risks palliative measures of bypassing the obstruction are being frequently adopted. A convenient length of the jejunum is mobilised and passed up into the neck either behind the sternum or through the anterior mediastinum and anastomosed to the oesophagus within the thorax well above the upper limit of the growth or at the root of the neck. In some cases when the general condition of the patient sufficiently improves, a second-stage operation for removal of the growth is taken advantage of. Surgical treatment for strictures of the oesophagus is indicated when it becomes impossible to dilate or maintain the results of dilatation. The nature of treatment has to be determined by the site, number and extent of the stricture. In favourable cases local resection and anastomosis may become possible. Otherwise bypassing operations hold good prospect of a comfortable existence.

Abdominal Surgery

The improvements that have been made in the domain of abdominal surgery have been possible by a more clear conception of the physiology and functions of different abdominal organs in the economy of the host and many other associated factors. At the present day extensive and destructive operations of partial and complete excision of important segments of the gastro-intestinal tract, short-circuiting procedures interfering with normal digestion and absorption or removal of some internal organs delivering enzymes and hormones, such as the pancreas and the adrenals, are fairly frequently performed. The biochemical and hormonal factors in health and their changes under diseased conditions are better known. This knowledge has enabled surgeons and biochemists to devise ways and means to supplement and substitute these deficiencies in order to maintain altered nutritional and hormonal balance. Pharmaceutical researches have contributed greatly in this direction.

Advances in diagnostic aids have enabled the profession to recognise intra-abdominal pathology with more precision. Information gained by radiography in different conditions are more revealing. Endoscopic studies with gastroscope, peritoneoscope, sigmoidoscope and the like have made possible direct visualisation of pathological processes. Information gained from haematological and biochemical studies has greatly helped in the diagnosis and in the assessment of the patient's vitality and has enabled the clinician to ensure protection to his patient at different phases of treatment and to recognise the limits of safety.

Gastric and intestinal intubation and drainage has materially helped in relieving distress and toxaemia.

More frequent exploratory laparotomy to verify the clinical diagnosis and extend proper surgery has brought to light many less recognised possibilities. The pathological studies of materials removed at operation have focussed attention on the fast changing conception of neoplasms and granulomas inside the abdomen such as retroperitoneal tumours, neuroblastomas, sarcoidosis and so on.

Splenomegaly and portal hypertension—The untoward results of splenectomy in cases of splenomegaly, on the assumption that all these have been cases of Banti's disease and further elaboration of the aetiology of enlargement of the liver associated with enlargement of the spleen and recurrent haematemesis, have led to the understanding of portal hypertension. During the last decade the condition has been critically studied and three types of portal hypertension—prehepatic, intrahepatic and posthepatic—have been differentiated according to the site of obstruction. The different aetiological factors leading to the three varieties of hypertension have been elaborated by clinical history and findings, laboratory tests of deranged liver function and portal venography. In the majority of these cases patients seek relief for recurrent bouts of haematemesis and splenic

enlargement. The site of haematemesis is verified by barium meal and if necessary by oesophagoscopy.

From these studies and from the study of portal venous pressure the enlargement of the spleen has been classified into primary hypersplenism and secondary hypersplenism. In the former the liver is enlarged with a certain degree of fibrosis. In such cases splenectomy holds out a good prospect of recovery. In intrahepatic hypertension the spleen is enlarged almost in every case but the liver is grossly damaged. In these cases, in the absence of much advanced liver damage and of ascites, surgical interference with a view to divert the blood flow from the portal venous system into one of the veins of the systemic circulation is attempted such as portocaval anastomosis and lienorenal anastomosis.

Troublesome oesophageal varices have been surgically treated by: (*i*) Exposure and submucous ligature of the varices above the diaphragm; (*ii*) Gastric or oesophageal transection to cut off the varices carrying portal blood to them; (*iii*) Excision of the lower oesophagus and upper stomach to remove the main varix bearing area.

In the selected group of cases shunting operations have given a fair degree of relief. The results of excision of oesophageal varices have not been good so far.

Ligature of the hepatic artery has been performed in cases of intrahepatic obstruction with thrombosis of the portal vein.

Gastro-intestinal: Stomach—With the idea of improving the results of operative treatment of peptic ulcers more and more of the stomach has been removed till a near total gastrectomy with anastomosis with the jejunum has been performed. Results however have not varied much. On the wake of such extensive resections, problems of anaemia, nutritional defects and postprandial symptoms—the dumping syndrome, also called vasomotor syndrome or small stomach syndrome—have to be faced. The aetiology of the syndrome is not yet fully understood. More than 75 per cent of patients get over the syndrome in six months. In the remaining they take a severe form and are disabling.

More extensive resections of the stomach along with the glands even up to total gastrectomy and oesophagojejunostomy is being undertaken for cure of gastic carcinoma. The prospects of a long-term cure however are not very encouraging.

In order to relieve patients with postgastrectomy states where total or near total gastrectomies have been performed procedures that may improve the mechanics and physiology of the digestive tract by increasing the emptying time into the duodenum and jejunum may be welcome. Such new procedures which are undergoing the acid tests of trial and error and considerable experimental work are—gastrectomy with replacement by (1) proximal jejunum (Lee and Henley, 1951-1952); (2) a segment of the transverse colon (James Morney, 1951), (3) ileocolic segment (Lee, 1951). Long-term results are awaited.

Crohn's disease—In 1927 Moynihan drew attention to nontuberculous affection of the small intestine. It was in 1932 that Crohn described a regional subacute or chronic necrotising and cicatrising inflammation of the terminal ileum. Later on it has been observed that similar lesions could be seen to occur in other parts of the small intestine as well as in the caecum and ascending colon. Since then different pathologists have tried to explain the aetiology of this condition and the pendulum has swang round one or the other theory that has been postulated from time to time and attempts have been made to find out its exact position in relation to chronic hyperplastic ileocaecal tuberculosis. At present there is a tendency to consider Crohn's disease to be the result of virus infection. Hadfield and Garrod consider it a local form of reticulosis and the pathological findings present certain features of sarcoidosis. Though the exact aetiology has yet to be established one fundamental conception that has evolved out of these studies is that the condidition up to the present considered as chronic hyperplastic tuberculosis of the ileocaecal region is in fact analogous to Crohn's disease. Time will prove the validity of this conception.

Idiopathic ulcerative colitis—Surgical treatment of idiopathic ulcerative colitis has come to the forefront in current years. "The surgery of ulcerative colitis is essentially destructive. It comes in where medicine has failed and has no place as an adjunct to medical treatment." —Ogilvie, 1940. Since that time the approach to treatment has entirely changed. During recent years the exact nature and extent of the lesion in idiopathic ulcerative colitis have been more clearly understood and it has been differentiated from two other conditions, ileocolitis (enterocolitis) and proctosigmoiditis (granular proctitis). The epicentre of the disease is the descending colon and the sigmoid and it extends downward into the rectum and proximally the process scarcely extends beyond one foot of the ileocaecal valve. It carries, along with it the complications of repeated haemorrhages, perforation, formation of polypoid excrescences, obstruction and malignancy.

Much discussion has centered round the extent of surgery necessary for cure. Some uniformity

has been reached out of the discussion and it is believed by most surgeons that a full excision of the colon and the rectum has to be done and that colonic and rectal destruction is irreversible.

Ileostomy has been performed to give relief to these cases in the past. Leakage of irritating and noxious fluid through the opening and in the nonavailability of a properly fitting ileostomy bag the operation was considered a tragedy. The use of Koening-Rutzen bag which is available from 1944, and its subsequent modifications have removed this disability.

Megacolon—The concept of megacolon (Hirschsprung's disease) has greatly changed since 1948. It is now recognised that the true megacolon is congenital and neurogenic. The aetiology is entirely different from organic megacolon and functional megacolon. The true megacolon is due to congenital absence or severe deficiency of the intramural ganglion cells of Auerbach's and Meissner's plexuses. The parasympathetic ganglion deficiency produces a functional obstruction because the affected bowel is incapable of an effective peristaltic conductive pattern. Dilatation, hypertrophy and ulceration are prominent features. The work of Swenson and Bodian *et al* (1949) has definitely shown that the obstruction lies in the innocent looking part below the dilatation. Sympathetic denervation as practised before gave only temporary relief. The operation at present practised by Swenson consists of a combined abdominoperineal operation in which the achalasic segment and some, or all, of the dilated colon is resected. The results have been highly gratifying.

Familial intestinal polypi—Familial intestinal polyposis of the rectum received importance from the researches of Lockhart-Mummery who in 1925 discussed its relation to cancer and heredity. He pointed out that cancer of the rectum and colon was usually common in families with cases of intestinal polyposis and that malignancy was liable to occur at an extremely early age specially when the polypi are sessile. Since then further investigations have proved the correctness of the statement. In many instances the polypi are multiple. He recommends total proctocolectomy with permanent ileostomy for these cases. There are other surgeons who follow a more conservative excision.

Circulation of the large gut, particularly that of the descending and pelvic colon, has been more critically studied during recent years and the extent of resection for carcinoma of the large gut at different levels has been modified in the light of the knowledge gained. During the last twenty-five years the principles underlying resection of the colon and anastomosis have undergone great changes. Extraperitoneal resection of the colon for carcinoma by the Paul Mikulicz's method was practised before 1931 when Devinie introduced his operation of proximal decompressing colostomy. This method with the technical improvements suggested by Lahey and a subsequent intraperitoneal resection and anastomosis, followed by third stage closure of the colostomy has been the method of choice. With the availability of sulpha drugs and antibiotics and with better understanding of the anastomosing circulation, it is now possible to undertake one stage resection and anastomosis without proximal drainage in suitable cases. Methods of intestinal decompression by Miller Abbott tube or such other tubes have greatly helped in post-operative management of these cases.

Duke's researches on the lymphatics of the rectum and the methods and areas of spread of anorectal carcinoma have led to a better scientific approach to radical surgery of the rectum. He has indicated more frequent possibility of venous spread. Certain new methods have been evolved to maintain the continuity of the gut and to preserve control of the sphincter of patients operated upon for rectal carcinoma. The operations are justified in a small number of carefully selected cases.

It is now established that in certain groups of cases of abdominal pain simulating intestinal obstruction, any one of the known causes cannot be made out during laparotomy. These patients have been treated variously and operated upon more than once but without any sustained relief.

Sarnoff, Arrwood and Chapman in 1948 clarified this obscure field by the use of differential spinal block. Using dilute solution of 0·2 per cent novocaine they succeeded in blocking the finely myelinated and unmyelinated sympathetic fibres in the ventral spinal roots up to the upper thoracic level. Larger myelinated fibres which carry sensation of abdominal distension were not influenced by the procedure. If peristalsis was increased and both co-ordinated by it, the manoeuvre could distinguish between neurogenic and true organic intestinal lesion (partial or complete obstruction) and in obstinate cases might cure the condition. Neurectomy from the ninth thoracic to the first lumbar ganglion and splanchnic sympathectomy by the Smithwick technique on both sides at two sittings is recommended.

The biliary tract—Materials at hand go to show that congenital anomalies of the gall bladder, extrahepatic bile ducts, and the blood vessels are varied. Their importance in the surgery of the

extrahepatic biliary tract is being more and more appreciated.

By far the most common condition for which surgery is called for are gall stones at different sites. During the second decade of the century controversy was raised to determine if cholecystectomy should be the operation of choice in cases of stones within the gall bladder. Many arguments were advanced in favour and against cholecystostomy. The school favouring cholecystostomy held that if the gall bladder was removed there was every likelihood of inco-ordination of the sphincter of Oddi. During the last thirty-five years cholecystectomy has been the operation of choice with most surgeons for stones in the gall bladder except when the general condition of the patient would not allow this major interference. Much technical progress has been made in these operations from time to time.

The introduction of cholecystography by Graham and Cole in 1924 was a significant advance in the diagnosis of diseases of the gall bladder and it gave a great fillip to gall bladder surgery. With cholecystography it was however not possible to visualise the ducts. Langecker introduced a new compound cholografin in 1953 and its use for cholangiography was reported by Sulton and Stillet in 1954. Cholangiography enables one to visualise stones, strictures, spasms and malpositions of the duct. The technique has to be further perfected to get more correct interpretations.

Statistical data from various clinics have been filtering through from time to time which go to show that many patients on whom surgery has been performed for gall bladder or biliary duct diseases have come back complaining of recurrence of symptoms of pain and dyspepsia after variable periods. These symptoms have been referred to as post-cholecystectomy syndrome. Leaving aside those cases where diagnostic error or operative misadventure has been the cause of recurrence of symptoms there remains a group of 15 to 20 per cent of cases in whom, on investigation and on further exploration, no mechanical cause could be made out. These cases have been the subject of a very critical study during the last ten years with a view to ascertain their causes and institute suitable treatment. Considerable volume of work is now available on this question. These cases have been considered as functional dyskinesia, hypertonic or hypotonic. The findings have been the outcome of further studies on the pressure regulatory mechanism of the sphincter of Oddi in health and disease. On the basis of the knowledge thus derived different methods of approach to treat these conditions have been formulated.

In most of these cases a second laparotomy has to be performed. Pre-operative cholangiography may help in anticipating the nature of interference that may be called for. During operation operative cholangiography is being taken advantage of by some surgeons. In the hypertonic groups of cases relief from increased pressure in the bile ducts in the presence of evidences of biliary and pancreatic infections, prolonged drainage of bile, through external drainage with a satisfactory type of T-tube or by internal drainage by transduodenal sphincterotomy or choledochoduodenostomy as found suitable has been recommended. The above procedures are giving relief in a majority of cases.

Priban (1950) analysed the underlying cause of the hypotonic groups of cases. He stresses that injury to the local autonomous nervous system, which resulted from the removal of the nerve plexuses in the wall of the gall bladder, was the cause. These plexuses play an important part in regulating the tension of bile ducts, and control the opening reflex of the sphincter at the entrance of bile ducts into the duodenum. He further came to the conclusion, and this is borne out by experiences of others, that hypotonic dyskinesia was more prone to occur in those cases where during the operation either an apparently healthy gall bladder with stone or without stone was sacrificed. Sympathectomy of the lower three thoracic ganglia plus the great splanchnic nerves has been practised by Mallet Grey (1951) with positive results. Bilateral vagotomy is also an operation practised by some. The end results are being watched with interest.

The most common causes of mechanical obstruction resulting in the persistence of symptoms and of biliary fistulae are calculi in the common duct left out at the previous operation and injuries to the common duct resulting in stricture formation. Pre-operative cholangiographic studies may be useful in identifying the cause. At the second operation the residual stone or stones are removed. At the present day operative cholangiography is in practice in some clinics to avoid this complication.

The operative reconstruction of duct injuries and malformations are beset with technical difficulties.

Strictures in certain situations such as at the lower end of the duct and damages at or above the union of the hepatic ducts are the most difficult to reconstruct. Highly ingenious operations have been devised by Catell, Longmire and others to overcome the difficulties.

Pancreas—It is being stressed more and more that if an absolute diagnosis can be made, the treatment for acute pancreatitis is no longer opera-

tive but conservative. If a laparotomy has to be performed it is unwise to interfere with the pancreatic tissue. During this time it is considered wise not to tackle the gall bladder. The aetiology of chronic relapsing pancreatitis is still debated. Many surgeons consider that biliary reflux is concerned with the aetiology of this condition. Gordon believes that in some cases of relapsing pancreatitis the primary disorder is the rare condition recognised as essential hyperlipaemia. Surgical treatment during the period of quiescence is mainly directed to improving the drainage of bile into the intestinal tract by different forms of surgery suited to individual cases. In cases where this has failed and in cases of diffuse calcinosis sympathetic denervation is recommended for relief of pain. Ray and Console (1949) detailed their experience as follows:

Chronic (calcareous) pancreatitis is often accompanied by pain so intolerable that some surgical measure is necessary for relief. Total or near total pancreatectomy is one method of treatment but it is not always feasible and at the least it is accompanied by a considerable operative risk and deprivation of endocrine and enzyme products. The alternative procedure of interruption of the pain pathways from the pancreas by sympathectomy is a safer method and the side effects of the operation are not serious.

Bilateral resection of the ganglionated chains from the eleventh thoracic to the first lumbar and greater splanchnic nerves has given very satisfactory results. The same operation is performed for chronic relapsing pancreatitis when other treatments fail to give relief.

Annular pancreas, a developmental anomaly has been known to produce symptoms mimicking peptic ulceration and biliary obstruction. It is now one of the recognised causes of duodenal obstruction of the newborn. Symptoms may supervene at any period of life. In this condition a band or a ring of pancreatic tissue continuous with the head of the gland completely or almost completely, surrounds the second part of the duodenum. Operative treatment by resection or short circuiting becomes necessary when symptoms of duodenal obstruction sets in.

Surgery of the Genito-urinary Tract

Kidney—More frequent use of pyelography—intravenous and retrograde, abdominal aortography, perirenal aerography and endoscopic examinations, has made it possible to diagnose renal and bladder lesions more accurately. Chemotherapy and antibiotics have controlled and minimised infections. The use of streptomycin and para-aminosalicylic acid has improved the prognosis of tuberculous infections of the genito-urinary tract. They have however not been able to replace surgery in all cases. Combined antibiotic and surgical treatment at the proper time and in selected groups of cases has given the best results. Nephrectomy with ureterectomy is called for in the presence of tuberculous cystitis and in the presence of pyonephritic cavities in the affected kidney. Early and systematic use of antibiotics goes a long way to prevent affection of the other kidney, specially in the absence of active extra-renal foci. Therefore an opportune time should be looked for to remove the affected organ.

More detailed biochemical studies and other methods of assessing renal efficiency have diminished operative risks. Attempts have been made to avert renal failure by artificial kidney. The method however has not yet achieved significant results.

The role of lesions of the kidney as a causative factor of hypertension received renewed emphasis since Goldblatt in 1937 showed by experimental studies that hypertension developed after a kidney had been made ischaemic and suggested that a unilateral ischaemic kidney could produce hypertension and removal of the kidney could restore the blood pressure to normal. Operative results however have not lent support to this view. It is generally agreed that the unilateral pathological lesions which would appear to give satisfactory results are those in which the renal blood supply has been affected, e.g., renal aneurysm, hypoplasia of the kidney and some obstructive injury or disease, such as atheroma of the renal artery. In other cases the results are short lived.

In order to negotiate big tumours of the kidney and perform operation under direct vision specially at the diaphragmatic end, different methods of surgical approach have been made use of. The incisions generally used are thoraco-abdominal, the lower limb of which is made to tail towards the anterior superior iliac spine, and Fey's approach is made through the bed of the eleventh rib. These incisions have not only improved surgical approach to the upper poles but have been also found suitable in operations on the suprarenals.

Several useful plastic operations on the renal pelvis and ureters have been devised to treat results of congenital anomalies and idiopathic hydronephrosis. The operations designed and perfected by Stewart (1947) and by Hynes (1949) have given satisfactory results. The superiority of these operations lies in the fact that they do not necessitate urinary tract drainage and therefore do not invite infection.

Partial nephrectomy—calicectomy—recommended by Engel in 1947 has been taken up by surgeons. The operation is indicated in patients with a stone in a dilated calyx, specially if the calyx is the upper or lower one, usually the lower. This operation has its special value when a stone is lodged in a single kidney or in a horseshoe kidney.

Renal denervation—Harris in 1930 described a symptom complex "renal sympatheticotonus" for cases of renal pain where no obvious cause except functional hydronephrosis could be made out by investigation or operation. This he considered as obstructive neuropathy, exhibiting the three stages: (1) instability or systole, (2) exhaustion or diastole, and (3) paralysis or hydronephrosis. He considered this to be due to activity of sympathetic nerve supply of the kidney. In these cases denervation of the renal pedicle, pelvis of the kidney and upper inch of the ureter has given satisfactory results in Harris' hand. Recently more complete denervation by splanchnicectomy is performed with better result. The sympathetic fibres to the kidney and ureter are derived from thoracic 10, 11, 12 and 1st lumbar segments and travel *via* the white rami, the lesser and the least thoracic splanchnic nerves, and the upper lumbar sympathetic nerves. They pursue a devious course through coeliac, aorticorenal ganglia and intermesenteric plexus to form a close interlacement around the renal artery accompanying the branches of the vessel into the kidney and along the ureter. So removal of the 10th dorsal to the 1st lumbar ganglion plus the great splanchnic nerve should be considered anatomically more sound.

Prostate: Prostatic hypertrophy—Patients suffering from enlarged prostate are prone to cryptic or incipient uraemia. Two stage operation has therefore been practised whenever in doubt and thereby the results of prostatectomies greatly improved. Suprapubic prostatectomy first practised by McGill and Feyrer with advancement in technique by Walker, Harris and others held the field till Millin (1945) introduced his operation of retropubic prostatectomy. The operation was hailed by the surgical world as one of the greatest contributions in prostatic surgery. Though Millin's operation with bilateral vasectomy has been performed in majority of clinics suprapubic prostatectomy still holds the honoured place in a fairly large group of cases. When Millin introduced his operation Hey was developing his technique of what he expresses as "aseptic prostatectomy" (suprapubic prostatectomy with immediate closure) even when patients presented themselves for relief of acute retention. It is yet to be seen how far this method will be safe for patients suffering from latent uraemia.

The technique of transurethral prostatectomy has been brought to a high level of efficiency by Thompson.

Carcinoma of the prostate—The modern trend of treatment of prostatic malignancy has already been referred to. The diagnosis of malignancy is not always easy. It is being realised that fair percentage of enlarged prostates considered benign and treated as such over a number of years do later on show evidences of malignancy. The value of elevated acid phosphatase in the diagnosis of malignancy has been stressed and so also an elevated alkaline phosphatase as indication of skeletal metastases. These serum tests however are only suggestive. More frequent biopsies are therefore advised.

Bladder: Carcinoma of the bladder—Intensive methods of radiotherapeutic treatment are now available for the treatment of these cases. Supravoltage deep therapy is used and affords better control. Intracavitary radiation with radioactive isotopes and radioactive tantalum wire offers alternative therapy for the control of these cases.

Neurological Surgery

The scope of neurosurgery has expanded during the last thirty years due to improvements in operative technique, progress in the investigative procedures, a better understanding of the physiology and anatomy of the brain and its components, and the pathology of intracranial tumours and other anomalies that require surgical interference.

Ventriculography enables one to differentiate between space occupying lesions and atrophic lesions of the brain. Routine skiagraphy of the skull is performed and gives valuable information at times.

The modern angiography was the result of the studies of Egas Moniz of Portugal in 1931. This enables a successful radiographic visualisation of the vascular tree by injecting thorotrast into the common carotid artery. Gross in 1941 advocated the use of diodrast in place of thorotrast. Angiography is now a valuable diagnostic procedure in confirming the findings of ventriculography and in the diagnosis of intracranial vascular abnormalities and aneurysms.

Recently radioactive isotopes are being used for the localisation of brain tumours.

Berger in 1929 perfected electroencephalography. Since then the electroenphalographic studies have enabled the clinician to find out the possibilities of the existence of a space occupying

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lesion within the skull and get an idea of its more accurate localisation. It can also help in distinguishing certain varieties of epilepsy and of accurately localising and defining areas of cortical "discharge". It can provide information of greater assistance in classifying the types of seizures and in localising the focus of discharge. These records provide adequate localisation for the diagnosis and for planning of craniotomy. The present day surgery of epilepsy has been the outcome of these studies.

Improvements in the surgical technique that has gradually progressed during the last twenty-five years have greatly facilitated surgical adventures. The availability of special instruments suited for different operations; the mechanical advantages gained in positioning the patient on specially designed operation tables; facilities of proper illumination; use of suction apparatuses; better methods of securing haemostasis are amongst others that have helped in this direction. Above all the services of surgeons specially trained for the purpose and who have dedicated themselves to the cause are now available. To ensure haemostasis Sir Victor Horsley used beeswax. Cushing (1911) used silver clips for bigger blood vessels. Since 1929 electrosurgery is available for the purpose. In later years fibrin foam and gelfoam are being used (1944-45). The results of operations have thus improved and superior rehabilitation measures have helped patients to stand on their own.

The common pathological conditions neurosurgeons have to deal with are intracranial tumours and aneurysms and angiomata. In spite of better understanding of the anatomico-physiological disturbances that are responsible for the development of congenital hydrocephalus its treatment still remains a baffling problem.

The present-day operative treatment of epilepsies has been mainly the outcome of information available by electro-encephalography.

Once the cortical area responsible for epileptiform seizures has been located by electro-encephalographic studies, careful radiological investigations and air-encephalograms are essential to exclude or identify tumours, to know if calcified intracerebral lesions are present and to get an idea of the presence and extent of brain atrophy. In chosen cases angiography will be of value to elucidate the pathological nature of the epileptogenic focus.

Cortical ablation is being performed for different groups of condition such as those caused by birth injuries, post-traumatic epilepsies, temporal lobe epilepsies and others. The nature of resection has to be decided upon on the nature of the lesion and the position of the epileptogenic focus. The extent of ablation that is possible is being very carefully studied. The progress that is bound to be slow, is based on a sound physiological foundation.

Ablation of the sensory cortex of the postcentral gyrus and the adjacent parietal lobe has been performed for relief of pain of phantom limbs with some success.

Taking advantage of the knowledge that the nervous system is so anatomically organised that functional units are discretely placed, the accurate application of a knowledge of physiology and anatomy has been used for the control of pain by interrupting those nerve pathways which conduct certain sensory impulses from the source of irritation to the location of conscious interpretation in the brain. The operations of rhizotomy and cordotomy have developed from this knowledge. In cases of intractable pain about the neck, shoulder and face as is sometimes present in cancer in these regions, sensory rhizotomy of the upper cervical roots on the involved side, together with resection of the root of the trigeminal nerve has given complete and lasting relief. Cordotomy is the operation of choice in patients suffering from intractable pain resulting from abdominal or pelvic cancers, malignant tumours of the spine, sacrum or lower extremities.

The principles underlying the treatment of head injuries have not materially changed. Better results are obtained by primary suture of soft tissue injuries and avoidance of wound infections by the use of antibiotics.

Surgeons were reluctant to suture nerves immediately after injury. Experiences of World War II have proved that best results are obtained if the divided nerves are sutured with the least possible delay, due care being taken towards efficient toiletting of the wound along with intensive antibiotic treatment. In cases where a portion of a nerve is destroyed, proper mobilisation above and below or transposition when possible has helped union without tension if the gap is small. Nerve crossing and nerve transplantation are reserved for longer gaps. Nerve grafts have been used to bridge over a gap. An autogenous graft, if available, is best. Homografts have been used with a fair amount of success.

Strict attention to asepsis, maintenance of the limbs in position suitable for a particular case and subsequent rehabilitation measures are essential for success.

Plastic Surgery

During the first half of this century Sir Harold Gillies was the pioneer to initiate reconstructive treatment of defects and deficiencies of human

form, congenital and acquired. Surgery of maxillo-facial defects caused during World War I led to the study of various problems confronting the surgeons in their task of reconstruction. Before this time, and even recently, plastic surgery connoted cosmetic surgery. Since then such substantial progress had been made in this branch of surgery that in 1940 Davis defined the scope of plastic surgery thus: "Its science is organised knowledge of the fundamental principles involved in the transplantation and shifting of tissues. Its art is the application of the knowledge and the actual manipulative reconstruction. The field extends from the top of the head to the sole of the foot."

As a matter of fact it was during World War II that plastic surgery came to be recognised as a speciality. Since then the scope has been ever expanding. Very great improvement in the technique of free grafting both of skin and of bone and cartilage occurred during the war. Different methods of skin grafting have been practised since Raverdin in 1869 used small thin pieces of transplanted skin which he termed "epidermal grafts" to cover granulating raw surfaces. In 1917 Sir Harold Gillies evolved the technique of pedicled full-thickness skin grafts. This graft was transplanted to bridge over a defect at a second sitting when its viability was ensured. He commenced transplantation of one stage direct pedicled graft in 1932 and also artery pedicle grafts. To cover up deficiencies of small mucous surfaces, bits of mucous membrane from inside the mouth have been used. Further developments have led to the use of fatgrafts to restore contours of the cheek and chin. For some years past full-thickness skin graft is being used in place of Thiersch graft. Full thickness grafts include the skin and the dermis. It has been experimentally proved that inclusion of subcutaneous tissue will jeopardise its life. In order to ensure the viability of full thickness skin grafts, autogenous grafts have to be used. The difficulty in getting the requisite extent of whole thickness skin for grafting over extensive raw surface of burns have led to the question of availing of homografts. Though the conditions that would make a whole thickness homograft viable are being seriously studied a satisfactory solution is not yet forthcoming. Skin homografts may take at the initial stage but they seldom survive for more than two to three weeks. In cases of extensive burns when homografts are used to cover raw areas it greatly helps in combating shock and in improving the general state of these patients. By the time it gets absorbed it is found that the raw surface has considerably epithelised. Residual raw areas are more easy to be controlled.

Great progress has been made in the reconstruction of congenital defects in the palate, lips and face. Cosmetic results have very much improved. In the surgery of the cleft palate the need of reconstructing the nasopharyngeal sphincter has been recognised. Veau's operation for reconstruction of palatopharyngeal valve and its subsequent technical modifications have greatly improved functional results. The importance of vocal training after these operations has been recognised and arrangements have been made to impart the training. Various prosthetic devices again have improved results. The progress in the art of colour tattooing has been introduced in the field of cosmetic surgery.

Plastic surgeons have contributed greatly in the reconstructive surgery of hand scars and disabilities caused by injuries and diseases of the different anatomical components of the hand and deformities and scar contractures of other parts of the body. Of late treatment of recent extensive burns has been the responsibility of plastic surgery units in many parts of the world. They have also greatly helped in cancer surgery requiring tissue bridging and tissue replacement. It appears that in near future the domain of plastic surgery will be further expanded and it will overlap or contract the jurisdiction of other specialities.

Orthopaedic Surgery

Antibiotic treatment has remarkable effect in acute infective osteomyelitis and has very effectively solved many difficult problems that the surgeons were confronted with in this regard even fifteen years ago. It has also its repercussions in the management of open fractures when combined with adequate surgery at its inception. The immediate risks and long-term complications and disabilities have been significantly minimised.

Antibiotic treatment for tuberculous affections of bones and joints has infused hope in the mind of the unfortunate sufferers of the disease. It has also been an effective weapon in the hands of the profession to treat these patients with more confidence and assure them better prognosis regarding cure, mininising disabilities and reducing the period of treatment. In a disease characterised by slow development it is not possible within the limited period that the facility of antibiotic treatment has been available to assess its full implication. The results that have been generally obtained by its judicious application in controlling the infection and the protection that it has afforded in extending surgical interferences to the diseased conditions have so far been encouraging. Anticipation can be made of better

days for the afflicted. Its role in controlling systemic infection in the majority of cases, is fairly established. It tends to localise lesions by affording an effective barrier round about. Incisional and excisional surgery that was so dreaded for fear of generalising the infection, has been made safer. The effect of secondary pyogenic infection after open operation can be combated nowadays with antibiotics. Local antituberculous therapy again helps in the healing of wounds.

In days not very far removed, surgeons were satisfied if they could give their patients ankylosed limbs in good position and were content if they could correct a deformed ankylosed limb by suitable extra-articular osteotomies and arthrodesis. The progress that has been made in the field of reconstructive surgery and more radical local surgery in recent years by many surgeons can be well realised from their reports. The results of excisional surgery in the treatment of skeletal tuberculosis so far reported hold out great hopes.

During the years under consideration very significant advances have been made in assessing the role of vitamins, enzymes and hormones in the metabolism of bone. The knowledge gained has clarified many issues concerned in the diagnosis and treatment of certain diseases of the skeleton.

Conservative treatment is still the order of the day in the treatment of closed fractures. The remark of Conwell "the treatment must be adapted to the fracture and not the fracture to the treatment" still remains true. Present-day surgery however demands the fullest anatomical alignment and the surgeons do not want to leave anything to speculation and chance. . This has increased the scope of operative fixation by internal splints. Operative treatment of fractures by metallic internal splints, advocated and intensively practised by Arbuthnot Lane, Hey Groves and others during the first half of the present century, did not meet with universal acceptance due to the apprehension of sepsis, imperfect adherence to technical details advised, and electrolytic action and osteosynthesis about the metals used leading to tissue reaction and loosening of the screws. In recent years these disadvantages do not weigh so much. Methods ensuring asepsis has greatly improved ; surgical techniques better standardised ; instruments and high power appliances for cutting, drilling and modelling bones are available. Metallurgists have placed at the disposal of surgeons stainless, vitallium and other alloys that have made their insertion possible into tissues without fear of reaction or loosening in the bone. It has however been stressed by Venable and Stuck that fixative appliances used must be of one alloy. Stainless screws in contact with vitallium plates will begin to corrode at the point of contact and will cause extensive soft tissue destruction and scarring.

Modern devices for securing apposition of fractures of long bones are by intramedullary pinning by wires, nails and rods. The nail of a cross section devised by Kuntscher (1940) is efficient and most commonly used. Vitallium plates and screws or stainless plates and screws are used for internal fixation of long bones like the femur that cannot be properly immobilised by the other methods. Smith-Paterson's nailing is suitable for the treatment of intertrochanteric fractures. Specially devised nail plates are used for fixation of pertrochanteric fractures.

In bone grafting autogenous grafts are still considered the best. The tibia and to a less extent the crest of the ilium and fibula are the sources from which such a graft is obtained. Homogenous grafts are however used fairly extensively. That homografts can be successfully transferred from one individual to another has been proved experimentally and justified by clinical experience. Care has to be taken to see that the donor is free from infection. Such bone grafts can be conveniently stored for future use. Inclan (1942) has proved that homografts can be stored in citrated blood at between 3-5°C in "deep freeze" for periods up to 63 days. The use of heterogenous grafts has been abandoned.

Skeletal traction appliances and their use have materially helped to maintain adequate traction. This has greatly added to the comfort of the patient. Skeletal traction for injuries of the cervical spine by Barton or Crutchfield tongs has become more popular in current years.

Restorative, reconstructive and stabilising surgery for diseases and deformities have made a headway during this period. Early and efficient repairs of soft tissues, tendons and nerves, made possible by the facilities available have helped to minimise and prevent many disabilities and contractures. The usefulness and limitations of arthroplastic operations are better understood. Reconstructive operations have a wide range of applicability.

In recent years mainly owing to the work of Smith-Paterson (1939) arthroplasty of the hip in the treatment of chronic arthritis has been widely practised. Since then vitallium mould arthroplasty of Smith-Paterson, arthroplasty by replacing the femoral head by acrylic prosthesis by Judet and Judet (1950) have evoked much discussion. Prosthetic appliances made of other materials are available now and those made of stainless steel find favour. Acrylic and stainless steel prosthesis is available for arthroplasty of other joints. Though these operations are great achievements in provid-

ing relief to cripples, many problems connected with the procedures remain to be solved.

Arthrodesis—Technical advances have been made in stabilising joints by arthrodesis in diseased conditions and paralytic states. Intra-articular procedures combined with three flanged nails has been advocated by Watson-Jones (1938). During the last fifteen years Brittain's extra-articular arthrodesis by bone grafts developed on sound architectural principles has made a profound impression and is being practised more and more. Extra-articular arthrodesis has found a wide field of applicability for stabilising progressive deformities of the spine due to different causes, such as, tuberculous affections, spondylolisthesis, chronic sacro-iliac arthritis and so on. In spondylolisthesis simple arthrodesis has not always helped due to nerve root compression by a mass of fibrocartilage. Surgical decompression by removal of the loose lamina and the mass of fibrocartilaginous tissue followed by arthrodesis has given better results. The usefulness of arthrodesis is being carefully investigated into, and means are being devised to overcome the drawbacks that are coming to light out of these investigations.

Disc protrusions—In 1934 Mixter and Barr described their concept of rupture of the intervertebral discs. Since then the wave of enthusiasm for disc exploration has settled down. Difficulties in exact diagnosis have not been completly solved. Explorations are performed when there is a reasonable doubt and when a course of conservative treatment fails. The question as to whether the removal of herniated disc alone should be sufficient in positive cases or whether the spine should be stabilised along with it is still an open one. Moore thinks that a wedge graft called a multiple-prop graft should be inserted to separate the bodies of the vertebrae, thereby increasing the dimensions of the foramina and giving the spinal nerve a greater margin of mechanical safety.

Reconstructive surgery—Since World War II special attention has been drawn to the crippling effects of hand injuries. The problem is being intensively studied and remedies have been evolved in various well organised centres in different countries. The best time to extend adequate and efficient surgery is at the inception of injuries, superficial and deep. Primary closure of wounds and covering up the whole injured area with skin or skin flaps is the essential desideratum. Principles of surgical repair and reconstruction for contractures and deformities have been well postulated by men like Sir Harold Gillies, Bunnel, Summar Kock, Rank, to mention a few.

Paul Brand (Vellore, India) who has dedicated himself to reconstructive operations of the deformed hand in leprosy, has received due attention.

Surgical treatment of deformities and instabilities of polio patients has also made a great headway. Organised polio clinics have been established in many places and the effects of planned treatment from the onset of the disease and its value in minimising the residual paralysis has been better appreciated during the last twenty years. Recent works have shown that much more can be done to rehabilitate these handicapped patients. The measures that are adopted in general are: to improve function, to prevent or correct deformities, to redistribute power round a joint, to stabilise limbs and to correct or ameliorate disturbances of growth.

Tendon transplantation has been practised over a long time as a means to redistribute power round a joint. But its application as a means of preventing deformity has only been recently made use of. Certain types of paralysis have been found to give rise to particular deformities so constantly that it has been considered judicious to carry out the operation of preventive tendon transplantation before the deformity has developed.

In the treatment of skeletal injuries and diseases, various new splints and appliances have been fashioned to adapt to individual requirements. These have influenced efficiency and comfort. Much more improved patterns of prosthesis are now available for the amputees.

Physiotherapy and Rehabilitation

Different forms of physiotherapeutic measures have been evolved during the last quarter of a century. Organised centres have been set up, equipped with remedial gymnasiums and electrotherapeutic appliances. Centres for the training in physiotherapy on scientific principles and methods have been organised. Services of trained physiotherapeutists and masseurs are available for orthopaedic units.

Progressive development of efficient and skilled service of nurses has by no means been insignificant towards the success of surgery.

Rehabilitation of patients is undertaken on broader principles today not only to achieve the greatest possible anatomical and physical restoration, but to make them physically, socially and economically fit. With this idea in view some occupational therapy units have commenced functioning where the patients are trained to substitute and adapt their remaining functions to the loss and make themselves fit for alternative vocations suitable to their capabilities.

PROGRESS IN OBSTETRICS AND GYNAECOLOGY

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In common with the other branches of the art and science of medicine, obstetrics and gynaecology have made great strides during the last quarter-century. Indeed, so much all-round progress during a span of twenty-five years has perhaps not been equalled at any time before. This has been possible through the concerted efforts, in all countries, not only of people belonging to these specialities, but to other disciplines as well. A brief review of the more important advances made in obstetrics and gynaecology during the last few decades is given here.

Antenatal Care

A great deal of benefit, to the mother and the baby, has accrued through the introduction and practice of regular antenatal care of expectant mothers in all countries. Introduced during the early years of this century, this practice has gradually spread all over the world. Antenatal care nowadays involves not only physical examination and periodical check-up of the mother and her baby inside, but this also allows the mother-to-be to get to know the place and the people who are likely to look after her during childbirth, thereby greatly relieving the mental tension and anxiety at the critical time. With this idea, regular classes, in small groups, are nowadays held to educate the mothers-to-be about the various changes that take place in them during different stages of pregnancy and labour.

As a result of widespread practice of antenatal care, emergencies with various types of obstructed labour necessitating destructive and mutilating operations, have considerably decreased in incidence and have almost become unknown in the more advanced countries.

Extended antenatal care has enabled us to detect, and manage better, several diseases incidental or peculiar to pregnancy-states. Researches and development in other spheres have greatly helped us in this respect. Severe vomiting in pregnancy, resisting all sorts of treatment and ultimately necessitating therapeutic abortion, is very rarely seen nowadays owing to better public consciousness, early medical attention, and especially to the recent development of drugs which are almost specific, unless it is very late.

Regarding heart diseases great advances have lately been made by the physicians and surgeons. As a result, a pregnant patient with "heart disease" can now very often sail through pregnancy and labour with close co-operation between the physician and the obstetrician. Even surgical operations on the heart are now being successfully performed on the pregnant patient.

Advances made regarding the medical, surgical and preventive treatment of pulmonary tuberculosis, therapeutic abortion for this indication is nowadays mostly not necessary nor advised ; the patient being often allowed to carry the pregnancy to term with necessary medical supervision.

Diabetes is another disease which is increasingly causing concern to obstetricians. In the pre-insulin era, few child or adolescent diabetics grew up, or lived long enough, for pregnancy and motherhood. Nowadays many diabetics do so. A pregnant diabetic requires frequent adjustments of her insulin and dietary needs throughout pregnancy and also for some time after childbirth. In the management of the pregnant diabetic, some authorities use sex hormones (oestrogens) with reported good results. The basic concept of this hormone therapy is that hormonal imbalance causes faulty nutrition and development of the diabetic placenta with its early senescence resulting in premature labour and late intra-uterine death. However, not everyone is convinced about the utility of this theory.

Other maternal illnesses have also been found, in recent years, to affect the foetus *in utero*. Rubella (German measles) occurring in the mother, specially during the first three months of her pregnancy, is likely to cause various types of congenital deformities including congenital cataract. Although the first reports from Australia suggested a 100 per cent consequential affection of this type, the present-day estimate appears to be near about 20 per cent. A recent report of a case, supported by experimental observation indicates that cleft-palate may be produced in the baby as a result of cortisone administration to the mother during pregnancy. With this and similar highly potent drugs being increasingly used in everyday practice, these reports have to be taken note of. Moreover, these observations also suggest the

possibility of various physical, mental and environmental influences on a pregnant woman producing some effect on the foetus *in utero*.

Eclampsia and pre-eclamptic toxaemia have been greatly reduced in incidence and severity in all countries as a direct outcome of extensive antenatal care. Several cases of maternal death have however been reported with only one eclamptic fit. The incidence of pre-eclampsia is however still quite high, necessitating further studies. It constitutes a serious problem to be effectively dealt with. Moreover in some quarters, a reduction in antepartum convulsions seems to have introduced a new element of unexpected single relatively benign postpartum convulsive seizure. Following the lead given by Stroganoff, the treatment of a patient with actual convulsions of eclampsia hinge mainly around effective sedation of the patient with morphine, mag. sulph., paraldehyde, barbiturates and lately chlorpromazine along with maintenance of effective function of the essential organs—the heart, the lungs and the kidneys. We have now learnt that pre-eclampsia is associated with a diminution of blood supply to the placenta, causing impaired supply of oxygen and nutrients to the foetus and also diminution of the steroid functions of the placenta. These factors often call for induction of labour in toxaemic patients when near about term. But induction is often unsatisfactory in even fulminating cases of pre-eclampsia before 36 weeks, and caesarean section in these cases may result in neonatal death from atelectasis and other causes. Mainly in this group of cases, as well as in a few others, a trial has often to be given to hypotensive drugs, of which quite a number like hydralazine, veratrum viride, protoveratrine, and hexamethonium compounds are in use, each with its own advantages and disadvantages. However, unnecessary prolongation of pregnancy with refractory toxaemia is avoided for that has been proved to be harmful both to the mother and to the foetus in the long term-view, as likely to leave permanent residual hypertension or kidney damage as well as to cause intrauterine foetal death. It must however be recorded that overall improvements in eclampsia and pre-eclampsia have, in their turn, also lowered the premature neonatal death rate.

The great loss of human lives through abortion and death of babies during or soon after birth, has engaged the attention of many, and has lately been studied in some detail. The studies of Hertig and Rock, as also of other workers, have proved that at least half the ova recovered from apparently causeless spontaneous abortions are abnormal, with originally defective germ-plasm. These findings indicate that an abortion is often one of Nature's ways to prevent the birth of foetuses destined to develop into various types of monsters. Regarding management of patients in the actual process of abortion, the old practice of bed rest and sedation, with morphine if necessary, still holds good. In threatened abortion, oestrogens have been advocated and used by many with the idea that they help to increase the manufacture of progestin considered essential for continuation of the pregnancy, especially at this early stage. Many others however are not at all convinced about it. Corpus luteum hormone was long advocated on the basis of animal experiments, and quickly came into disrepute, as falling far short of expectations, besides being expensive. With modern facilities available, progestin in suitable and effective dosage, appears to be indicated in threatened abortion where there is actual deficiency as indicated by low excretion of urinary pregnanediol. Patients with 3 or more repeated abortions have been studied under the clinical group "habitual abortion"; and with extensive investigations and proper management, before and during subsequent pregnancies, many of such patients have been enabled to be happy mothers of one or more children. Along with various other measures, deep implantations of crystalline progesterone "pellets" appear to be well indicated and have been highly successful in suitable hands.

It may not be out of place to mention that the legal implications of abortion have undergone great changes in diverse lands. While most of the English speaking countries still enjoin age-old practices, several European countries and Japan in the East, have greatly liberalised abortions, which may be undertaken by a doctor just at the request from a patient.

Foetal and neonatal loss through premature births has in recent years drawn the attention of all concerned. It has been estimated that deaths through prematurity alone contribute to about 50 per cent of neonatal mortality. A liberal supply of oxygen to the mother in premature labour, and after delivery, maintenance of free airway, regulation of body temperature in a suitable atmosphere with not more than 40 per cent oxygen concentration and the minimum of handling of the baby are the principal points in the modern management of prematurity.

The opposite condition of postmaturity with pregnancy continuing beyond the normal span of 40 weeks, and its related problems have engaged our attention in recent years. Clinical observations and experimental work have proved that in these cases there occurs a gradual inadequacy of the placenta with progressive anoxia and deprivation of nourishment to the foetus with rapidly

growing needs and the percentage of oxygen saturation of foetal circulation decreasing gradually up to term, and rapidly thereafter. These factors threaten the life of the foetus *in utero*, even before labour has started ; and neonatal death in post-mature babies comes more often through asphyxia or aspiration rather than due to trauma or infection. In these cases of postmaturity, we are usually guided by three main principles—the existence of some other anoxia-producing factor (e.g., toxaemia) adds to the foetal risk, long labour with meconium-stained liquor should form an indication for caesarean section, and a difficult vaginal delivery should be avoided.

Haemorrhages

Our knowledge, methods of diagnosis and management of obstetric haemorrhages have advanced a great deal during the past quarter century. It is now well established that accidental antepartum haemorrhage, although occasionally caused by trauma and injuries (e.g., during external version), is mostly due to hypertensive toxaemia of pregnancy. Besides general attempts to prevent and adequately treat toxaemia, we do not as yet know the prevention of this type of antepartum haemorrhage. Various radiological techniques have been devised for establishing the diagnosis of placenta praevia, as well as the location of the placenta. Injection of a radio-opaque medium (sodium iodide) into the bladder and then taking a skiagram in the erect or semi-erect posture—both anteroposterior and lateral views, helps us to locate the site of the placenta by noting the distances between the shadow of the foetal skull from the bladder, the symphysis pubis and the sacral promontory. Special techniques for soft tissue radiography, amniography have also been evolved as aids to diagnosis of placenta praevia. In certain hands calcification of the placenta has been demonstrated to help in placental localisation. We have nowadays learnt that a posterior placenta praevia is far more dangerous to the baby, than an anterior one, as being more likely to be compressed by the foetal head, causing early foetal asphyxia and death. This has further necessitated attempts at exact localisation of the placenta.

The treatment of placenta praevia has improved considerably in recent years. As preached and shown by Macafee and other workers, the present trend in cases of placenta praevia is towards conservative management, with transfusions of blood as and when necesasry, in a suitably equipped hospital to prolong the pregnancy up to 38 weeks and thereby give the baby a better chance for survival. After 38 weeks of pregnancy, the patient is delivered by caesarean section or puncture of the membranes from below (with or without traction on the foetal head) depending mainly upon the location of the placenta and the dilatation of the os. Rupture of the marginal sinus of the placenta has been lately recognised as another new cause for antepartum haemorrhage, although a diagnosis is usually not possible until after the placenta has been expelled and examined carefully.

Abnormalities of the clotting mechanism of the blood have been found lately to be an occasional but serious cause of uncontrollable obstetric haemorrhage, associated mainly with three conditions—abruptio placentae, amniotic fluid embolism and certain cases of retained intra-uterine dead foetus. These cases show a marked deficiency, sometimes a total absence, of fibrinogen in circulating blood. There is absence of, or very delayed, clotting of blood and whatever clot at all forms, is altogether fragile. It is generally accepted that in this condition extensive and very fine intravascular clotting occurs due to liberation of thromboplastins from damaged tissues into the maternal circulation. All, or almost all, available supplies of fibrinogen are thereby used up, and the liver is unable to replace the fibrinogen quickly enough. Moreover, there may also be a defect or reduction in its manufacture by the liver. The treatment for these cases is to give intravenous infusion of 2 to 6 g. of fibrinogen in dextrose solution, failing which, concentrated plasma, along with fresh whole blood transfusion.

Postpartum haemorrhage does occur quite unexpectedly on many occasions ; but its occurrence is often prevented by a timely intravenous or intramuscular injection of the alkaloid ergometrine just when the baby is being born. This has been found to limit the bleeding but at times causes incarceration of the placenta, particularly if the injection has been given too late. Manual removal of the placenta is nowadays undertaken much more frequently than 25 years ago, and the current facilities of anaesthesia, transfusion of blood or its substitutes and antibiotics have together rendered this procedure much safer than before.

The development of blood transfusion services and commercial availability of blood plasma and its various substitutes have received a great stimulus during and after the second world war. Obstetric patients, the world over, seem to be the greatest beneficiaries of these services. A great part of the achievements of modern practice of midwifery is therefore directly attributable to it.

Relief of Pain in Labour

The last quarter century has seen many efforts with fair success to relieve the pain and distress of childbirth. Chloroform came into such practice from Victorian times. Later on, we had various combinations of injections or rectal medication to produce what was termed "twilight sleep". The demands for relief of pain in modern society have further improved our methods. Apparatuses for inhalation analgesia (gas and air mixture, trichlorethylene etc.) have been evolved and the mother herself can administer the analgesic as and when she feels a necessity for it. Administered and constantly observed by doctors, various pain-killing procedures have been developed. These include continuous caudal, spinal saddle-block, pudendal block, and local infiltration analgesias. The last method appears to be the safest and requires least technical skill. Anaesthesia for obstetric operations, in the usually unprepared patient, with consequent vomiting, aspiration and occasional death, is at present a matter for serious concern.

Sepsis

Childbed fever or puerperal infection was once the scourge of obstetric practice and a veritable dread to prospective mothers. Even 25 years ago it used to take a heavy toll of maternal lives. Following the discovery and clinical use of chemotherapeutic and antibiotic drugs we now rarely lose a mother from sepsis following childbirth or abortion. It must however be duly appreciated that scrupulous aseptic technique and practices in the conduct of labour are also largely responsible for this great saving of maternal lives. Nowadays it has become a common although a questionable practice with many to use sulpha drugs and/or antibiotics as a routine prophylaxis in all cases of labour and abortion.

The Newborn

Several important advancements concerning the newborn have taken place in recent years, and are briefly reviewed here owing to their impact on obstetric practice.

Premature babies continue to pose special problems (*vide supra*), specially because, with newer knowledge we nowadays sometimes terminate a pregnancy before term in the best interests of the baby and occasionally of the mother as well, as in certain cases of maternal toxaemia, diabetes, placenta praevia and erythroblastosis foetalis. This last-named condition is much better understood now, and is known to be due to the haemolysing action of antibodies developed in the mother's blood. The Rh-factor of human blood has been found to possess antigenic properties and is present in the red cells of about 85 per cent of the human population. A mother who does not possess this factor (Rh-negative) develops antibodies in her blood during pregnancy if the foetus inside is Rh-positive, having inherited that quality from its father. The maternal antibodies then cross over to the foetus causing haemolysis by reacting on the foetal red blood cells. The successive babies of the same mother may then be affected by severe jaundice developing soon after, at or even before, birth. Replacement transfusion with non-sensitised Rh-negative blood with or without premature termination of pregnancy is often the only way to save the lives of babies born of such a marriage.

The finding of a hyaline-like membrane on microscopic examination of the lungs of many babies, specially premature ones, with neonatal death, is causing increasing anxiety to us during the last few years. Babies who have never breathed do not however show this membrane. As yet this problem remains mainly unsolved.

During the last few years, several cases of rapidly progressive eye-changes leading to complete blindness within the first two years of life were reported, particularly in premature babies, caused by a condition called retrolental fibroplasia. It has now been found to be caused by a very high concentration of oxygen used for the premature baby during the first few days of its neonatal life. Reducing the oxygen concentration to about 40 per cent is now considered safe in this respect.

Compared to 25 years ago, we are now able to salvage many more babies with asphyxia neonatorum—both by prevention and improved management. Avoiding unnecessarily prolonged or difficult vaginal delivery, a liberal supply of oxygen to the mother during labour, maintenance of a clear airway of the baby after birth, suitably giving oxygen for absorption by the baby, respiratory stimulants where necessary and injection of nalorphine to the baby to counteract the effects of sedatives given to the mother—are the more salient points in our management of these cases nowadays.

Hormones

In gynaecology, one outstanding advance in our knowledge during the last few decades is the detailed information now available with regard to the inter-relation between the various endocrine secretions and also the chemical relationship amongst the steroid hormones of the body, particularly in the causation of normal regular

menstruation. We now have a better idea regarding the physiological and pathological changes seen in the microscopic appearances of the uterine endometrium in different circumstances. Indeed, gynaecological endocrinology has already become an interesting though rather complicated subject, and our knowledge about gynaecological pathology also is fast advancing. As a result, we are nowadays able to understand and treat many of the aberrations and irregularities of menstruation with the combined help of our knowledge in pathology and endocrinology. One example of this is what is often termed "functional uterine bleeding," which we now know to be caused by an improper balance and effect of the sex hormones, which can often be effectively treated by other hormones, apart from a curettage where indicated.

Sterility

Studies in this subject have greatly advanced our knowledge and methods of investigation and treatment in cases of infertility or subfertility. In 1920 Rubin described a test to know the patency of the fallopian tubes. With modifications in the details, such a test for tubal patency, has now become one of the important steps in the investigation of infertile women. We have also learnt that, besides patency, the tubes have other contributions towards a normal pregnancy which have to be duly considered, namely—the peristaltic action, the behaviour of the fimbriated ends at the time of ovulation, the ciliary activity and possibly an enzymatic action of the tubal mucosa. Radiological studies after injection of a radio-opaque medium into the uterus (hysterosalpingography) is another method that we frequently employ nowadays to know further details about the tubes and the uterus. Occasionally the technique of culdoscopy is used to have a direct view and assess the pathological conditions affecting the tubes and ovaries.

Examination of the cervix, its canal, the cervical mucus and the cervical contents after coitus have gradually formed another aspect of investigation, and treatment as indicated, in cases of sterility. In 1866 Marion Sims emphasised the valuable information available on accurate examination of the cervical mucus after coitus. Later on, Hühner in this century, made further studies about the passage of spermatozoa up the cervical canal. This postcoital test of cervical mucus is perhaps best performed at or soon after ovulation, for the cervical receptivity is stated to be maximum during the ovulatory phase of the cycle. Cervical invasion by spermatozoa has been found to take place within a few minutes after ejaculation. This postcoital test gives extremely valuable information about the cervical mucus, the sperms and their mutual reaction, and is specially important in those cases where, for various reasons, the husband refuses to be examined.

The hormonal and egg-producing potentialities of the pituitary-ovarian relationship is another new field of investigation for sterility that has been developed in recent years. A record of the body temperature, once daily on rising in the morning (basal temperature), usually shows a small fall, followed by a maintained rise at the midcycle; and indicates the occurrence, and the time, of ovulation. While this represents the normal picture, abnormalities often occur. The rise of temperature has been known to be delayed even up to 3 days, is believed to be caused by progesterone in circulation, and may be initiated by progesterone administration after a preliminary course of oestrogen—in patients with amenorrhoea.

Besides the usual clinical and laboratory investigations, including examinations of the blood, urine and the B.M.R., the above mentioned three points indicate the lines in which our present knowledge requires investigations to be done, regarding the wife, in cases of sterility. We have now learnt however that the husband alone is responsible for sterility in about one-third of the cases. No investigation therefore is considered as complete without a thorough examination of the husband regarding his procreating powers. Treatment of cases of sterility has however not yet attained an equal degree of satisfactory precision as in diagnosis. Various operations have been devised for restoring patency of the tubes in cases of blockage; but only with very limited success. Operations and hormonal treatments are often undertaken for an incompetent or inefficiently functioning cervix, again without all-round success. Deficiencies in egg-production or abnormalities in pituitary-ovarian interrelationship do not often respond well to treatment with gonadotrophic hormones. Small stimulating doses of x-rays to the pituitary or the ovaries or even to both, have been reported to yield satisfactory results in the hands of highly skilled specialists. But the dangers of genetic mutation, occurring in subsequent generations must be kept well in mind before undertaking extensive radiation therapy to the gonads. Moreover, as yet, we have no means to find out if the ova produced by a woman, either spontaneously or as a result of treatment, are at all healthy and viable.

Cancer of the Uterus

Cancer of the uterus, of the cervix and of the body, has been a subject of continued and inten-

sive study during the past few decades, and specially in recent years. A good deal of knowledge about the detailed pathology as well as diagnostic methods has accumulated during these years, along with simultaneous improvements in methods of treatment and ultimate prognosis. it is now fairly established that the greater part of invasive cervical cancer is frequently preceded by a sufficiently long stage of intra-epithelial cancer, and this, in its turn, is often preceded by a precancerous cellular stage, which is perhaps more or less easily reversible but most often accessible to estimation. The modern diagnostic methods include colposcopy, cytology and exfoliative karyology, through evaluation on morphological as well as on functional basis. It has been demonstrated that only by means of systematic examination with complete colposcopic and exfoliative cytologic methods advocated by Papanicolaou, and the karyologic one, according to Cusmano, Barigozzi and Dellepiane, and further aided by definitive histological evaluation of the biopsy carried out on colposcopic and cytokaryological methods can we at all hope to achieve anything near to perfection in the diagnosis of early cancer cervix.

Regarding treatment of cancer cervix, although there is no strict agreement about the details, the overall general opinion seems to indicate that well-directed radiotherapy is being increasingly impressive and more effective—either alone or in conjunction with surgery. Wider extended surgery with extensive removal of pelvic organs along with chains of the lymph nodes has however given satisfactory results in the hands of a few master surgeons. It seems that with improved and better radiological methods including telecobalt and interstitial radioactive gold, in suitable cases, radiotherapy will in future be able to salvage a far larger number of victims of cancer cervix with a far lesser number of urinary fistulae. For cancer of the body of the uterus, a present-day tendency is to advocate extended hysterectomy instead of the former procedure of total hysterectomy with removal of both appendages. This has however not received general acceptance as yet.

Operative procedures have come in for a good deal of modifications, alterations and additions during the last 25 years. Caesarean section is nowadays undertaken quite frequently and often with much wider indications. Incidence of stress-incontinence seems to have increased in recent years. This has led to the evolution of several types of operations, often with quite good results. Safety of surgery has, in some places, led to a large number of hysterectomies being performed, perhaps too many. As a result, in certain centres, they have set up "tissue committees" consisting of pathologists, gynaecologists and surgeons. Such a committee examines in detail each individual case including histological examination of tissues ; and this acts as a check on unnecessary sacrifice of uteruses. Gynaecology and specially obstetrics have progressed a great deal during the last 25 years, thus ensuring greater safety and good health to our mothers-to-be. But a great deal of this benefit has been possible through the helping hand offered not only by diagnostic services like radiology, various types of laboratory and pregnancy-diagnosis tests, but also by the safety assured from blood transfusion services, modern anaesthesia and newer and newer antibiotics.

A Hundred Years Ago : Medicine under Difficulties

I was requested by the King to see the sick lady, and accordingly went to the Chutter Munzil palace, where I was received in great state and was taken to the sick-room. The chief eunuch, Bashir ud Dowlah, and others, with a number of female attendants, were present. A cashmere shawl was stretched across the room, behind which the Begum was seated. I immediately said that unless the purdah was removed nothing could be done. They made no difficulty, as it was "hakim ka hukum", and there was the lady seated upon a silver charpoy, enveloped in shawls. This was no better than a purdah. However, I knew patience was necessary, as I took a seat by the figure, Bashir ud Dowlah talking to her, telling her that without seeing her nothing could be done, she giving faint and muffled replies from the depths of the shawl. At last she put out her hand for me to feel her pulse; but immediately I attempted to touch her wrist, she wriggled off the charpoy, and waddled out of the room, wrapped in her shawls. The interview was over for that day. Profuse apologies were made, and I was asked to make allowances for feminine weaknesses. The next morning I went again; the same scene was enacted, and the confusion of the attendants was extreme. Meanwhile I had arrived at the conclusion that the lady who was so very active could not be so very ill! On my third visit I made progress, and was allowed to see her face and her tongue and to ascertain something of the nature of her case. The next time she laid aside her shawls and her veil, and we sat and talked face to face, she having got over her shyness. She was very loquacious, talked like a child, and seemed very pleased with her freedom. After this she was constantly asking me to go and see her. In a few days she consented to submit to an operation (paracentesis), which I performed. She got much better, and the hakims declared shortly afterwards that she had quite recovered. The result of this was that the king in durbar ordered an honorarium of 20,000 rupees to be sent to me. I received 3,000 ! He sent me a beautiful sword with a Damascene blade and silver and ivory handle, some magnificent shawls, two long and one square, what is called a "doshala rumal", a splendid piece of Cashmere work, very heavily embroidered in gold which I subsequently gave to the Museum in Edinburgh, and a young Arab horse.

—Sir Joseph Fayrer (1857)

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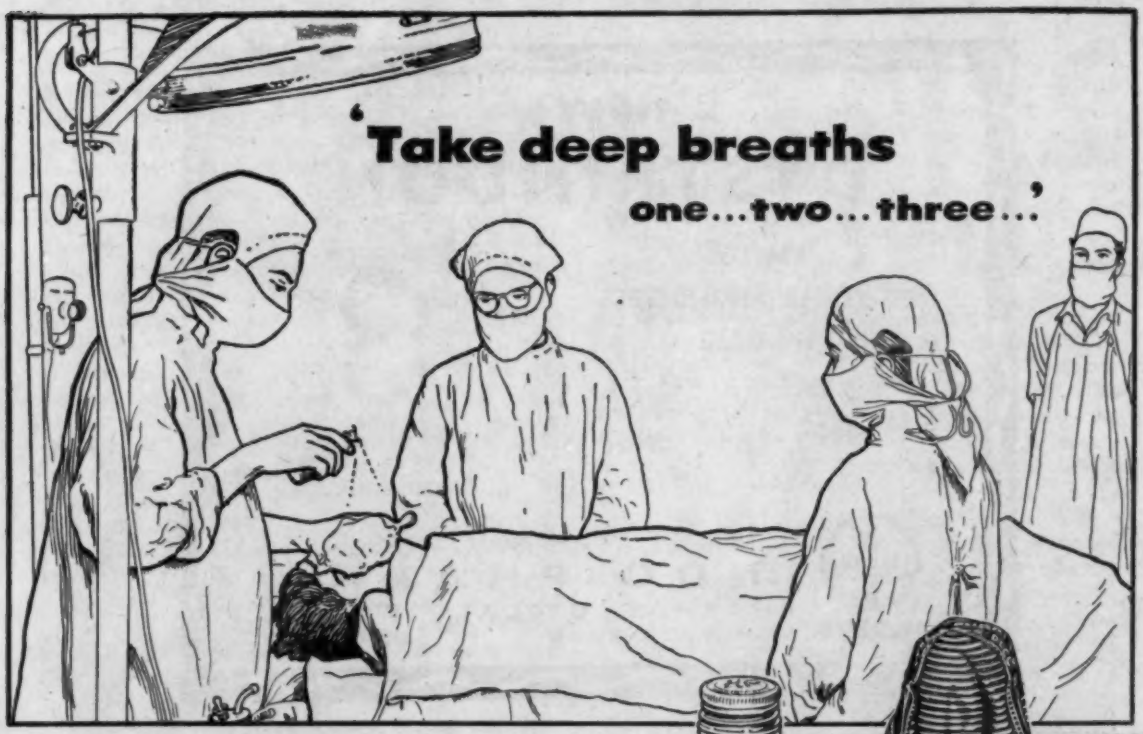

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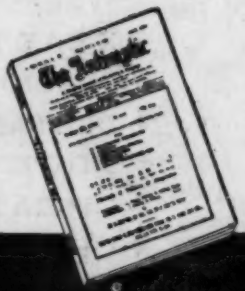

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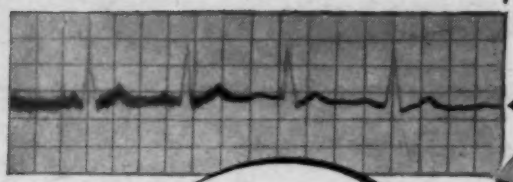

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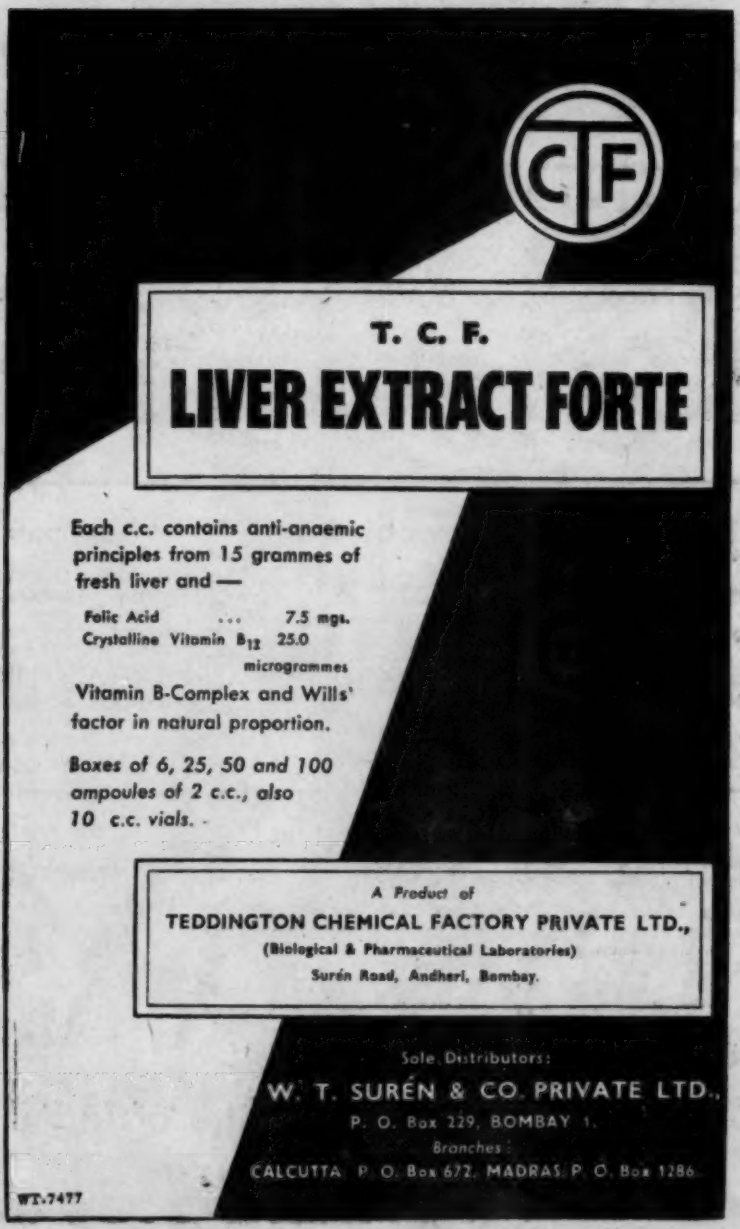
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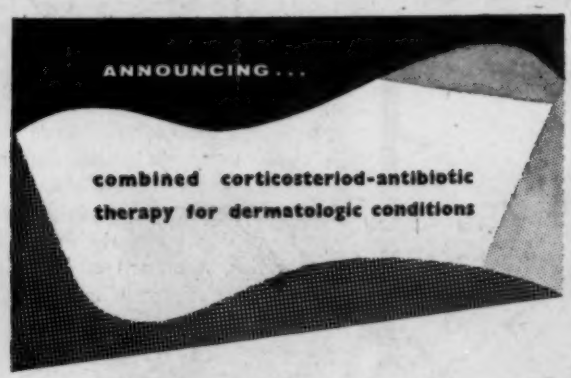

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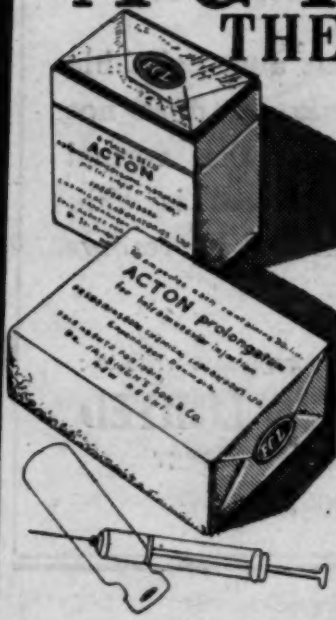

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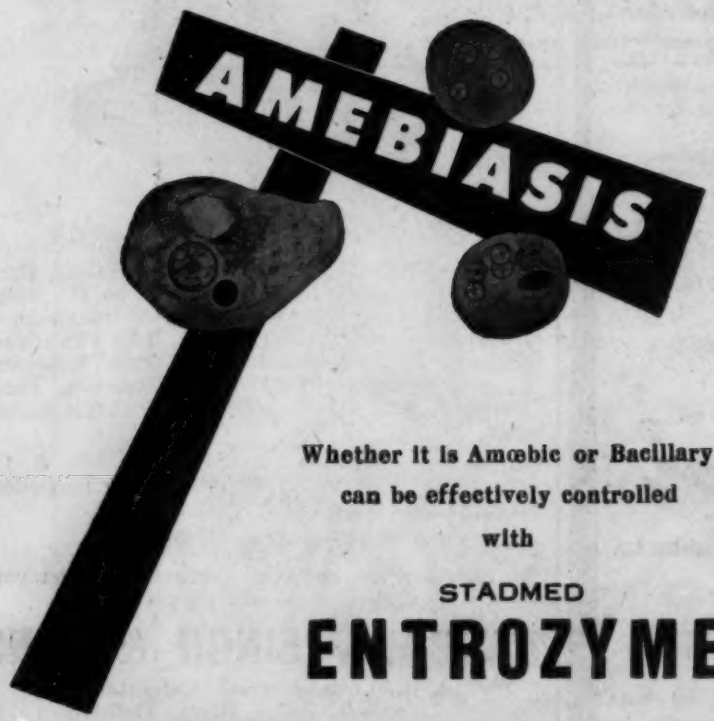

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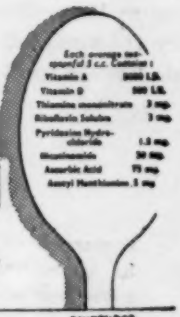

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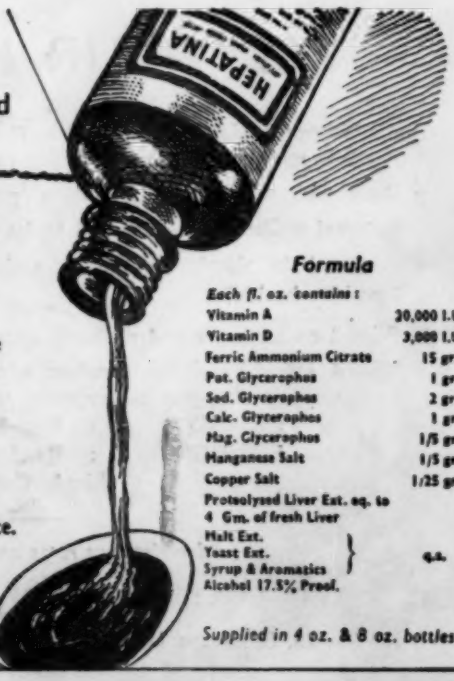

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